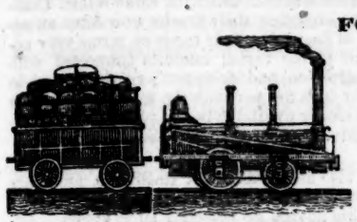
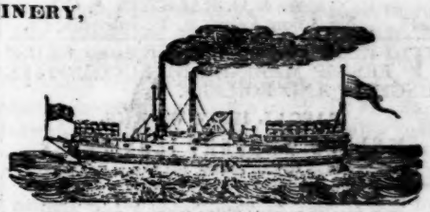
AMERICAN RAILROAD JOURNAL,

AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY, AND MINES.





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THE AMERICAN RAILROAD JOURNAL is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

RATES OF ADVERTISING.

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One square "	2 50
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One columnn " "	3 00
One square " "	1 00
Professional notices per annum	5 00

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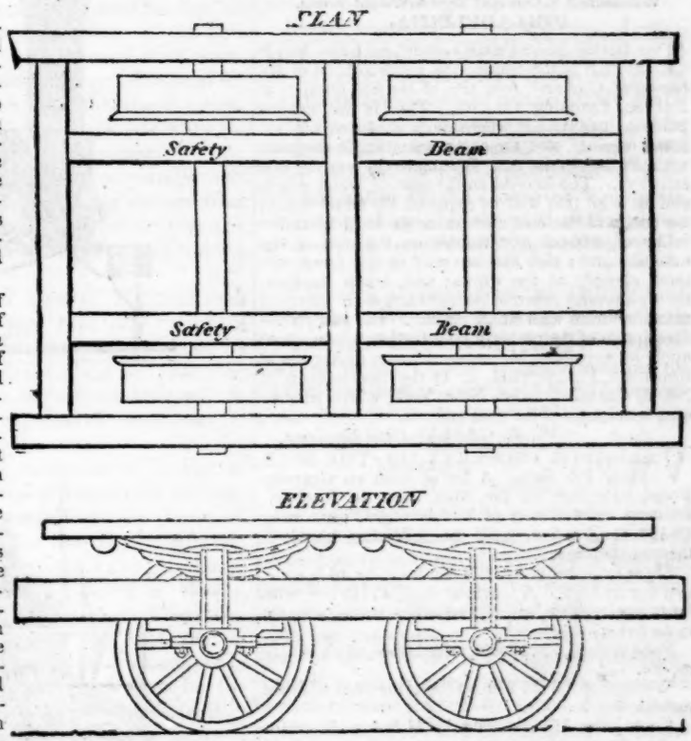
A. & G. RALSTON & Co. Philad. Pa. [*See Adv.*]
THOMAS & EDMUND GEORGE, Philadelphia. [*See Adv.*]

KITE'S
PATENT SAFETY BEAM.



MESSRS. EDITORS.—As your Journal is devoted to the benefit of the public in general I feel desirous to communicate to you for publication the following circumstance of no inconsiderable importance, which occurred some few days since on the Philadelphia, Wilmington and Baltimore railroad.

On the passage of the evening train of cars from Philadelphia to this city, an axle of our large 8 wheeled passenger car was broken, but from the particular plan of the construction, the accident was entirely unknown to any of the passengers, or, in fact, to the conductor himself, until the train, (as was supposed from some circumstances attending the case,) had passed several miles in advance of the place where the accident occurred, whereas had the car been constructed on the common plan the same kind of accident would unavoidably have much injured it, perhaps thrown the whole train off the track, and seriously injured, if not killed many of the passengers.

Wilmington, Del., Sept. 28, 1840.

☞ The undersigned takes pleasure in attesting to the value of Mr. Joseph S. Kite's invention of the Safety Beam Axle and Hub for railroad cars. They have for some time been applied to passenger cars on this road, and experience has tested that they fully accomplish the object intended. Several instances of the fracture of axles have occurred, and in such the cars have uniformly run the whole distance with entire safety. Had not this invention been used, serious accidents must have occurred.

In short, we consider Mr. Kite's invention as completely successful in securing the safety of property and lives in railroad travelling, and should be used on all railroads in the country.

JOHN FRAZER, Agent, JAMES ELLIOTT, Sup. Motive Power,
GEORGE CRAIG, Superintendant, W. L. ASHMEAD, Agent.

☞ A model of the above improvement is to be seen at the New Jersey railroad and transportation office, No. 1 Hanover st., N. York. ja45

TO IRON MANUFACTURERS. THE SUBscribers, as Agents of Mr. George Crane, of Wales, having obtained a patent in the United States for his process of smelting Iron Ore with Anthracite coal, and holding an assignment of the patent obtained by the late Rev. F. W. Geissenhainer, are prepared to grant licenses for the manufacture of Iron according to Mr. Crane's principle.

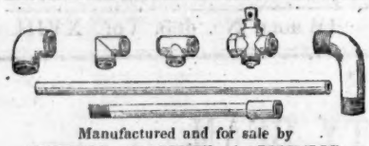
A. & G. RALSTON & CO.,
ja45 No. 4 Sout Fronth st., Philadelphia, Pa.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ⅛ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

TO IRON MASTERS.—FOR SALE.—MILL SITES in the immediate neighborhood of *Bituminous Coal* and *Iron Ore*, of the first quality, at Ralston, Lyoming Co., Pa. This is the nearest point to tide water where such coal and ore are found together, and the communication is complete with Philadelphia and Baltimore by canals and railways. The interest on the cost of water power and lot is all that will be required for many years; the coal will not cost more than $1 to $1 25 at the mill sites without any trouble on the part of the manufacturer; rich iron ore may be laid down still more cheaply at the works; and, taken together, these sites offer remarkable advantages to practical manufacturers with small capital. For pamphlets, descriptive of the property, and further information, apply to Archibald McIntyre, Albany, to Archibald Robertson, Philadelphia, or to the undersigned, at No. 23 Chambers street, New York, where may be seen specimens of the coal and ore.

W. R. CASEY, *Civil Engineer*,

VALUABLE PROPERTY ON THE MILL Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 feet, with lathes, work benches, &c.

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store-house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side of Parker st., containing 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & Co., Philadelphia. ja45

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by A. & G. RALSTON
Mar. 20tf 4 South Front St., Philadelphia.

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws; Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention. ANDREW C. GRAY,
ja45 President of the Newcastle Manuf. Co.

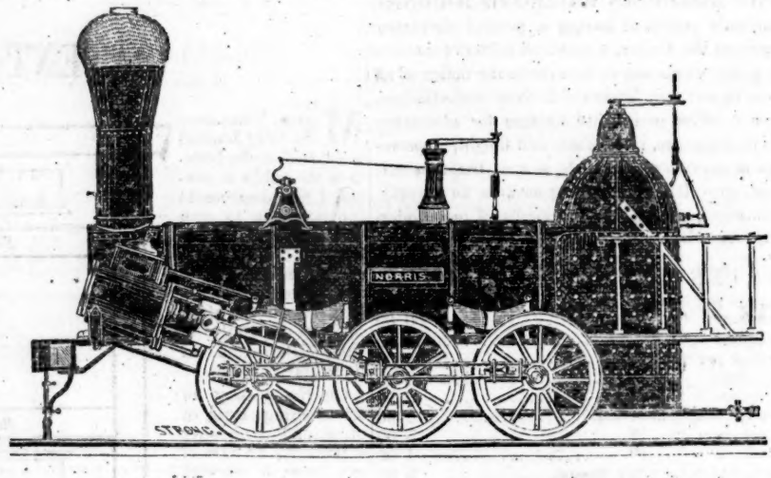
CUSHMAN'S COMPOUND IRON RAILS etc. The Subscriber having made important improvements in the construction of rails, mode of guarding against accidents from insecure joints, etc. —respectfully offers to dispose of Company, State Rights, etc., under the privileges of *letters patent* to Railroad Companies, Iron Founders, and others interested in the works to which the same relate. Companies reconstructing their tracks now have an opportunity of *improving* their roads on terms very advantageous to the varied interests connected with their construction and operation; roads having in use flat bar rails are particularly interested, as such are permanently available by the plan.

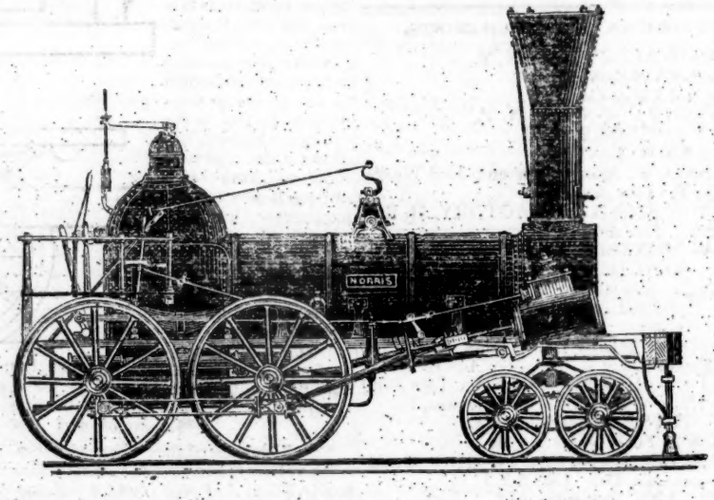
W. Mc. C. CUSHMAN, *Civil Engineer*,
Albany, N. Y.

Mr. C. also announces that Railroads, and other works pertaining to the profession, may be constructed under his advice or personal supervision. Applicaitons must be post paid.

NORRIS' LOCOMOTIVE WORKS

BUSH HILL, PHILADELPHIA; Pennsylvania.





MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15	inches	Diameter	of	Cylinder,	× 20	inches Stroke.
"	2,	14	"	"	"	× 24	"	"
"	3,	14½	"	"	"	× 20	"	"
"	4,	12½	"	"	"	× 20	"	"
"	5,	11½	"	"	"	× 20	"	"
"	6,	10½	"	"	"	× 18	"	"

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion.

Castings of all kinds made to order; and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

NORRIS, BROTHERS.

DUBLIN AND KINGSTOWN RAILWAY

THIRTEENTH ANNUAL REPORT.

We give this report for the purpose of showing the success, 1st, of well located railways in connection with large cities, even when only a few miles in length; 2d, their tendency to create business for themselves, and thus become ultimately, if not immediately, profitable when judiciously and liberally managed; i. e., when managed so as to promote the *mutual* interest and convenience of the *masses* and the *proprietors*; and, 3dly, to show the results of a year's operation on the atmospheric railway from Kingstown to Dalkey. We hope it will be read with care by all interested in railways, and especially by those who have the management of the *Harlem* railroad—a work which has heretofore generally been managed in a way neither to *conciliate* the people nor to promote the interest of the proprietors. The late managers have, it is true, somewhat improved upon their predecessors, and given more energy to their operations, yet there is *ample* room for further improvement.

DUBLIN AND KINGSTOWN RAILWAY.

The thirteenth annual meeting of the above company was held on Saturday, in their rooms in Westland Row, Dublin.

P. Low, Esq. in the chair.

Mr. JAMES PIM, treasurer, read the following REPORT:

Dublin, 29th March, 1845.

Gentlemen—The comparative statements of traffic and the statistical returns with which we have commenced our annual reports for some years past have given much satisfaction, and we, therefore, continue them as the best means we know of to afford you information as to the present and progressive state of your concern:—

The number of passengers booked at all the stations this year, was	1,710,503
Preceding year,	1,506,819
Increase,	203,684
Estimated trips by subscribers,	523,930
Preceding year,	455,232
Increase,	68,698
Gross number of passengers this year, subscribers included,	2,234,433
Preceding year,	1,962,051
Increase,	272,382
Subscriptions received,	£6,867 4 6
Preceding year,	5,785 18 1
Increase,	£1,881 6 5
Gross income from all sources	£51,187 6 7
Preceding year,	45,255 8 2
Increase,	£5,931 18 5

CLASSIFICATION OF PASSENGERS FOR THE LAST SIX YEARS, INCLUDING SUBSCRIBERS.

Year ending last day of Feb.	First class.	Second class.	Third class.	Total.
1840	30,422	550,414	700,10 5	1,280,761
1841	35,558	724,105	759,383	1,519,024
1842	37,001	849,116	754,968	1,632,085
1843	68,156	960,937	729,788	1,758,878
1844	98,076	1,049,243	814,732	1,962,951
1845	104,109	1,219,556	910,768	2,234,433

Total number of trains despatched,	30,745
Total number of miles travelled,	184,470
Average number of coaches per train,	7·511
Average number of passengers per train	72·676
Consumption of coke (gas coke) per train per mile, (lbs.)	18·789
Average sum received per passenger per mile, subscribers included, (pence)	0·893
Cost of locomotive power per train per mile, (pence)	9·452

A considerable proportion of the increase in the receipts this year is due to the atmospheric railway from Kingstown to Dalkey, which has, as we anticipated, been eminently successful as an experiment—has greatly increased the number of passengers by the railway—has added very materially to the value of your property, and has laid the foundation for future extensions of the line, to which you may look forward with confidence, as the sources of large additional income, and to which we conceive the company is well entitled by its liberality towards the public and its enterprize.

Whilst on this subject, we would call your attention to the following extract from a report of the board, presented to you at a special meeting of the company, on the 6th of April, 1842:—

"If the proposed loan of £25,000 shall be now obtained, and that repayment of principal and interest shall be accepted by the treasury, at the rate of six per cent., the annual charge upon the undertaking will be £1,500 a year, for a period of about twenty-eight years.

"If the proposed extension to Dalkey be at all successful, even to the extent of paying its own working expenses, the increased traffic upon the main line resulting therefrom will more than pay this annual charge of £1,500 a year to the Board of Works, and there can be no doubt that if these results are obtained during the first year or two, the very great increase of residents in the precincts of Dalkey, which must be the natural consequence of an increased facility of communication and intercourse between it and Dublin, will necessarily bring a vast increase of traffic upon the railway."

From this extract it will be seen that the board did not anticipate any immediate direct profit from this extension; and although the expenses of this line have amounted to a very large sum in proportion to its receipts, it has arisen from several causes—most of them incidental to a first trial, and all of which are capable of satisfactory explanation; but there is one of those causes so peculiar that we desire especially to call your attention to it, as it has grown out of that system which you have long since sanctioned, and which, after much discouragement, has led to such gratifying results in the management of our undertaking, namely, that of endeavoring to create a traffic, and to increase it to the greatest extent, by affording to the public the utmost possible accommodation, and at very low rates.

One great object which we have steadily kept in view, was to encourage permanent residents along all parts of the line and the surrounding neighborhood. We have, therefore, continued to run the Dalkey trains every half hour, up to nine o'clock at night, although very few passengers, indeed, have been conveyed after 6 o'clock, P. M., during the winter, and many of the trains have run without a single passenger.

We are, however, confirmed in our conviction of the soundness of this policy by the preparations which are now being made in the district of Dalkey and Killiney, to which we have alluded, for building operations on a very large scale. It is a striking evidence of the disadvantageous manner in which this traffic has been carried on with reference to the proportion of expenses and income, that the average number of passengers in each carriage has been under four.

Notwithstanding these apparent discouragements, our confidence is unshaken in the ultimate complete and entire success of the atmospheric system, and a highly gratifying evidence of the extent to which public attention has been directed to it, has been lately evinced by the appointment of a select committee of the House of Commons, consisting of some of the most distinguished members, to enquire into the system.

* * * * *

The work performed on the Dalkey line, from the 29th March, 1844, to the 28th February, 1845, has been 8,753 trains each way, or in all 17,506 trains, consisting of 64,042 coaches, conveying 240,225 passengers.

Average coaches per train,	3·65
" passengers, "	13·69
" " coach	3·75

In consequence of the successful results of the extension from Kingstown to Dalkey, as well as from a conviction of the vast importance of the subject, we have had under our anxious deliberation for many months past, the propriety of promoting an extension of the line to the county of Wicklow, and after much consideration, we came to the conclusion that your interest would be best advanced by the formation of a separate company to complete the line from Kingstown to Wicklow, and we had, consequently, resolved to have the necessary surveys made and the usual notices inserted in the Gazette.

We were then made aware that a powerful and enterprising English company had determined to promote a coast line from Kingstown to Wexford and Waterford, and we gladly agreed to co-operate with them in promoting this very important object—stipulating, however, that we should, in any event, secure our original plan of an extension to Wicklow.

Circumstances arose which rendered it desirable that this great measure should be postponed for a year, and after much consideration, we determined on abandoning

that portion of our project between Bray and Wicklow, and confining our present exertions to complete the line to Bray.

Our reason for postponing the Bray and Wicklow portion was, that it might interfere, or, at least, appear to interfere, with the greater project; and the reasons why we determined to endeavor to complete the line to Bray are sufficiently important to demand a separate paragraph.

Assuming that a line of railway is completed from Kingstown to Bray, we submit, without hesitation, that in order to secure the success of the undertaking it must be worked on the same principles which we have endeavored to carry out on the Dublin and Kingstown line; in a word, *maximum* accommodation to the public and *minimum* fares; and, to secure the first, it is absolutely necessary that the trains shall run from an early until a late hour in the day, and at short intervals.

Now, let it be assumed that the line from Bray to Wexford and Waterford is completed, the character of the traffic on such a line would be altogether different, and might, and probably would, require a different arrangement to arrive at maximum profits.

These considerations have led us to the conclusion, that we ought to use our most strenuous exertions to promote the formation of the Kingstown and Bray company, and the construction of the line.

The bill for the incorporation of the company has been brought into Parliament by our directions, as the provisional committee; it has been read a first time, and we are informed by our professional advisers that the standing orders of both houses have been strictly complied with, and we have every reason to hope that the act will be obtained early in the present session.

Of the importance of this extension to your interests, we need not enlarge, but we are anxious to record our opinion, that so far from its interfering with the greater and more interesting project to which we have already alluded, it would, by removing many local difficulties of a peculiar character, greatly facilitate its future construction.—Part of the conditions upon which the shares in the Bray extension were allocated was, that the Dalkey extension should be conveyed to the new company at and for the sum of £35,000, and a resolution to that effect will be proposed at the present meeting. * * * * *

The gross profits for working the railway for the first year, including the Dalkey line, are.....	£27,590	2	4
From which deduct — payment to board of works on account of loan, £6,000; interest on debentures, £2,244 19s. 2d.; interest on other loans, £401 11s. 10d.....	8,626	11	4
Leaving the nett profits of the year.....	£18,963	11	0
From which this meeting is required to set aside one-eighth part, as a fund to meet contingencies.....	2,370	8	11
	£16,593	2	5
Add surplus from last year..	3,843	6	7
Making a present surplus of	£20,436	9	0

From this sum the directors recommend that you shall now declare a dividend of 9 per cent. per annum, amounting to £18,000, and which will leave a surplus of £2,436 9s. to be carried to next account, and, in addition to which, your fund to meet contingencies will amount to £3,528 5s. 6d.

Messrs. Francis Low, Arthur B. Cane, and James Dawson, are the directors who this year go out of office by rotation, but they are eligible to be re-elected.

THE EARL OF ROSSE'S GREAT TELESCOPE.

We offer our readers an account of the performance of the Rosse Telescope, which we have as far as possible condensed from a valuable and interesting memoir published in the Times newspaper of April 15, by Sir James South. We make no apology for the reprint, as we are anxious to have a systematic record of all that affects the advance of science, and feel also that though most of our readers may have seen the original account, this condensed form of it will perhaps invite a reperusal.

"In the Times, of September last, I had the gratification of announcing to the public that the construction of the large telescope by the Earl of Rosse was so far advanced that the instrument had actually been directed to the heavens, and that, too, with satisfactory results.

"The great speculum, however, as then used, had been only approximately published, and was inserted in the tube merely to ascertain if its focal length coincided with that which it was designed to give it.

"The diameter of the large speculum is six feet, its thickness five inches and a half, its weight three tons and three-quarters, and its composition 126 parts of copper to 57½ parts of tin; its focal length is 54 feet—the tube is of deal; its lower part, that in which the speculum is placed, is a cube of eight feet; the circular part of the tube is at its centre, seven feet and a half in diameter, and at its extremities six feet and a half. The telescope lies between two stone walls, about 71 feet from north to south, about 50 feet high, and about 23 feet asunder. These walls are as nearly as possible parallel with the meridian.

"In the interior face of the eastern wall a very strong iron arc, of about 43 feet radius, is firmly fixed, provided, however, with adjustments, whereby its surface facing the telescope may be set very accurately in the plane of the meridian—a matter of the greatest importance, seeing that by the contact with it of rollers attached to one extremity of a quadrangular bar, which slides through a metal box fixed to the under part of the telescope tube, a few feet from the object end of the latter, whilst its other extremity remains free, the position of the telescope in the meridian is secured, or any deviation from it easily determined, for on this bar lines are drawn, the interval between any adjoining two of which corresponds to one minute of time at the equator. The tube and speculum, including the bed on which the latter rests, weigh about 15 tons.

"The telescope rests on an universal joint, placed on masonry about six feet below the ground, and is elevated or depressed by a chain and windlass; and, although it weighs about 15 tons, the instrument is raised by two men with great facility. Of course, it is counterpoised in every direction.

"When completed, its range will embrace an arc between 10 degrees of altitude towards the south and 47 degrees north; so that all objects between the pole and 27 degrees south of the equator will be observable with it; whilst in the equator any object can be viewed with it about 40 minutes of time on either side of the meridian.

"The observer when at work stands in one of four galleries, the three highest of which are drawn out from the western wall, whilst the fourth, or lowest, has for its base an elevating platform, along the horizontal surface of which a gallery slides from wall to wall by machinery within the observer's reach, but which a child may work.

"The telescope lying at its least altitude can be raised to the zenith by the two men at the windlass in six minutes; and so manageable is the enormous mass, that, give me the right ascension and declination of any celestial object between these points, and I will have the object in the field of the telescope within eight minutes from the first attempt to raise it.

"When the observer has found the object, he must at present follow it by rackwork within its reach. As yet it has no equatorial motion, but it very shortly will, and at no very distant day clockwork will be connected with it, when the observer, if I mistake not, will, whilst observing, be almost as comfortable as if he were reading at a desk by his fireside.

"The night of the 5th of March was, I think, the finest I ever saw in Ireland. Many nebulæ were observed by Lord Rosse, Dr. Robinson and myself. Most of them were, for the first time since their creation, seen by us as groups or clusters of stars; whilst some, at least to my eyes, showed no such resolution. Never, however, in my life did I see such glorious sidereal pictures as this instrument afforded us.

"Although, however, the power of this telescope in resolving nebulæ into stars hitherto considered irresolveable was extremely gratifying, still it was in my mind little more than I had anticipated; for experience has long since told me that a telescope may show nebulæ, even those resolvable by it, very well, whilst, when directed to a bright star, with a very moderate magnifying power, its imperfections will be actually offensive.

"Perfection of figure, then, of a telescope

must be tested, not by nebulæ, but by its performance on a star of the first magnitude. If it will, under high power, show the star round and free from optical appendages, we may safely enough take it for granted it will not only show nebulæ well, but any other celestial object as it ought. Regulus, on the 11th, being near the meridian, I placed the telescope on it, and with the entire aperture and a magnifying power of 800 I saw, with inexpressible delight, a star free from wings, tails, or optical appendages; not, indeed, like a planetary disc, as in my large achromatic, but as a round image resembling voltaic light between charcoal points; and so little aberrations had this brilliant image that I could have measured its distance from and position with any of the stars in the field with a spider's line micrometer, and a power of 1,000, without the slightest difficulty; for not only was the large star round, but the telescope, although in the open air and the wind blowing rather fresh, was as steady as a rock.

"On subsequent nights, observations of other nebulæ, amounting to some thirty or more, removed most of them from the list of nebulæ, where they had long figured, to that of clusters; whilst some of these latter, but more especially 5 Messier, exhibited a sidereal picture in the telescope such as man before had never seen, and which, for its magnificence baffles all description.

"Of the moon, a few words must suffice. Its appearance in my large achromatic of twelve inches aperture, is known to hundreds of your readers; let them, then, imagine that with it they look *at* the moon, whilst with Lord Rosse's 6 feet they look *into* it, and they will not form a very erroneous opinion of the performance of the leviathan.

"On the 15th of March, when the moon was seven days and a half old, I never saw her unillumined disc so beautifully, nor her mountains so temptingly measurable. On my first looking into the telescope, a star of about the 7th magnitude was some minutes of a degree distant from the moon's dark limb. Seeing that its occultation by the moon was inevitable, as it was the first occultation which had been observed with that telescope, I was anxious that it should be observed by its noble maker; and very much do I regret that, through kindness towards me, he would not accede to my wish; for the star, instead of disappearing the moment the moon's edge came in contact with it, apparently glided on the moon's dark face, as if it had been seen through a transparent moon, or as if the star were between me and the moon. It remained on the moon's disc nearly two seconds of time, and then instantly disappeared, at 10h. 9m. 95·72s. sidereal time. I have seen this apparent projection of a star on the moon's face several times, but from the great brilliancy of the star this was the most beautiful I ever saw. The cause of this phenomenon is involved in impenetrable mystery*

"The only telescopes in point of size comparable with Lord Rosse's 3 feet and 6 feet are Sir William Herschel's 20 feet and 40 feet Lemaircan's. The 20 feet had a speculum of 18·8 inches diameter, and the 40 feet one of 4 feet.†

"The Lemairean of 18·8 inches diameter in point of light is equal to a Newtonian of 22 inches and a half diameter.

"The Lemairean of 4 feet diameter is equal to a Newtonian of 57 inches and fourtenths.

"The Lemairean of 3 feet is equal to a Newtonian of 43 inches.

"And the Lemairean of 6 feet is equal to a Newtonian of 86 inches.

"By substituting, then, the Lemairean form for the Newtonian, the present 3 feet Newtonian will be made as effective as if it were 43 inches diameter, and the 6 feet as if it were 86 inches in diameter; or the quantity of light in each telescope, after the alteration, will be, to its present light, as 7 to 5 nearly, or almost half as much again as it now has.

"Seeing, then, that the change from the Newtonian to the Lemairean construction will be attended with such an accession of light, Lord Rosse, having determined geometrically the form of the curve requisite to produce with it a definition of objects equal to that which each of the telescopes at present gives, is devising mechanical means for producing it; but as he is, in about a fortnight, coming over to England to attend his parliamentary duties, it is probable that this important desideratum will scarcely be effected till autumn comes upon us.

"What will be the power of this telescope when it has its Lemairean form it is not easy to divine;—what nebulæ will it resolve into stars; in what nebulæ will it not find stars;—how many satellites of Saturn will it show us;—how many will it indicate as appertaining to Uranus;—how many nebulæ never yet seen by mortal eye will it present to us;—what spots will it show us on the various planets; will it tell us what causes the variable brightness of many of the fixed stars; will it give us any information as to the constitution of the planetary nebulæ;—will it exhibit to us any satellites encircling them; will it tell us why the satellites of Jupiter, which generally pass over Jupiter's face as discs of nearly white light, sometimes traverse it as black patches;—will it add to our knowledge of the physical construction of nebulous stars; of what mysterious class of bodies which surround some stars, called, for want of a better name, "photospheres;"—will it show the annular nebula of Lyra merely as a brilliant luminous ring, or will it exhibit it as thousands of stars arranged in all the symmetry of an ellipse;—will it enable us to comprehend the hitherto incomprehensible nature and origin of the light of the great nebula of Orion;—will it give us, in easy, appreciable quantity, the parallax of the nebulæ themselves;—finally, having presented to us original portraits of the moon and of the sidereal heavens, such as man has never dared even to anticipate,—will it by daguerreotypic aid administer to us copies founded upon truth, and enable astronomers of future ages to compare the moon and heavens as they then may be, with the moon and heavens as they were? Some of these questions will be answered affirmatively, others negatively, and that, too, very shortly; for the noble maker of the noblest instrument ever formed by man "has cast his bread upon the waters, and will, with God's blessing, find it before many days."—*Civ. Eng. and Arch. Jour.*

* Would not this appearance, it is asked with great submission, indicate a refracting atmosphere which the telescopes hitherto constructed have not been able to detect? If this hypothesis turn out correct, it will be easy enough to determine the extent of the atmosphere, by observing in sidereal occultations the time of a star's passing from the moon's apparent edge, (namely, the limits of her atmosphere,) to her real edge. Since the above was written, a letter from Sir James South has appeared in the Times, in which it is stated that the phenomenon occurs both at immersion and emersion. Is not this a powerful confirmation of our hypothesis?—*Ed. C. E. and A. Journal.*

† Sir James South intends here, we presume, to draw a comparison between "reflecting" telescopes only.

A NOVEL VIADUCT, TRULY.

We find the following notice of a "*novel railway viaduct*" in the London Mining Journal, of 19th April. The writer says that,

"A model has been prepared of the viaduct designed by Messrs. Leahy, the engineer of the Cork and Bandon line, for the intended crossing over the mail coach road and valley at Chetwynd, situated about four miles from Cork. The extreme height of the viaduct is 82 feet over the valley, which is passed by three equal spans, each 240 feet; the centre and the two abutment piers are of stone, in a bold and enriched Doric style, which has an exceedingly pleasing effect. The model is one-twelfth of the full size, and this proportion is strictly preserved in all its parts; the construction is very handsome, extremely simple and novel; the greater number of its parts are of uniform size and shape, and, curious to say, there is neither a mortice and tenon joint, or a spike or nail in the entire structure, nor will there be any necessity of centering for its erection. All these peculiar features of the design will reduce the expense of its construction far below the usual cost of such works; the model has been subjected to a most rigid test, by loading its entire surface with a pile of metal weights, equivalent to over 1000 tons on the real structure, and yet it sustained the immense weight with the greatest ease.—There is no viaduct in Europe constructed on this principle, which, from its great simplicity, cheapness and efficiency, will enable companies to construct railways in localities where otherwise they could not be attempted—and for this reason it promises to be of national advantage. The other bridges and viaducts on this line are of similar character; we may allude to that intended for the Bauden river,, crossing as a chaste continuance of the arch and truss principle, combining beauty with strength and economy in a high degree."

We shall be greatly obliged to any gentleman who will furnish us with further details of this viaduct.

ENGLISH RAILROAD SHARE-LIST.

NAME OF RAILWAY.	Miles opened.	Total sums, in pounds, authorized to be raised by shares.	Total sums, in pounds, authorized to be raised by loan or mortgage.	Total sums, in pounds, expended at dates of latest balance sheets.	Cost of working, in pounds for six months as stated in latest balance sheets.	Total earnings, in pounds, for six months as stated in latest balance sheets.	Dividend at last meeting. Per share. £ s. d	Per cent. per annum. £ s. d	Paid on share.	Value of share.
Arboath and Forfar	15	102,000	35,000	138,870	.....	.....	0 12 6	2 10 0	25	27
Birmingham and Gloucester	55	1,187,500	407,336	1,500,806	39,261	53,203	1 5 0	2 10 0	100	100
Brandling Junction	23	161,700	365,470	481,452	.....	.....	.....	4 10 0	50	54
Bristol and Gloucester	37½	400,000	211,000	.....	.....	.....	.....	nihil.	30	36
Chester and Birkenhead	14½	750,000	143,170	518,980	5,856	13,148	0 8 6	1 14 0	50	32
Dublin and Drogheda	31	450,000	150,000	500,869	.....	.....	.....	nihil.	55	72
Dublin and Kingston	6	200,000	152,200	359,000	.....	.....	6 0 0	6 0 0	100	166
Dundee and Arbroath	16¾	100,000	49,445	153,416	2,989	6,993	1 5 0	5 0 0	25	29
Durham and Sunderland	18¾	169,350	124,055	270,392	9,889	17,702	.....	nihil.	34	29
East County and North and East	86¼	4,443,200	1,341,155	3,931,905	47,385	118,726	1 6 6	.....	45	57
Edinburg and Glasgow	46	1,125,000	375,000	1,649,523	29,429	55,866	1 2 6	4 10 0	50	57
Glasgow, Paisley and Ayr	51	937,500	.....	1,066,951	12,446	36,736	1 2 6	4 10 0	50	60
Glasgow, Paisley and Greenock	22½	650,000	216,666	787,884	11,572	23,177	0 5 0	2 0 0	25	12
Grand Junction	104	2,478,712	.....	2,453,169	84,309	195,080	5 0 0	10 0 0	100	210
Great North of England	45	969,000	581,017	1,262,518	12,201	36,189	1 12 6	3 5 0	100	119
Great Western	221¾	4,650,000	3,679,343	7,272,539	132,235	369,904	3 10 0	7 0 0	75	138
Hartlepool	15½	438,000	155,540	719,205	.....	.....	.....	8 0 0	100	...
Leicester and Swannington	16¼	140,000	.....	140,000	2,207	6,317	1 5 0	5 0 0	50	...
Liverpool and Manchester	32	1,209,000	497,750	1,739,835	57,239	117,559	5 0 0	10 0 0	100	203
Llanelly	27	200,000	44,000	221,624	.....	.....	1 0 0	2 0 0	87	...
London and Birmingham	12½	6,874,976	1,928,845	6,393,468	92,823	405,768	.....	10 0 0	100	218
London and Blackwall	3¾	804,000	266,000	1,315,640	15,978	23,870	.....	.....	16	6
London and Brighton	56	1,793,800	998,350	2,630,451	29,372	84,880	0 12 0	2 8 0	50	47
London and Croyden	8½	550,000	229,000	761,885	7,583	10,545	0 5 0	2 10 0	14	17
London and Greenwich	3¾	759,383	233,300	1,040,930	15,193	28,933	.....	nihil.	13	10
London and South Western	92¾	2,222,100	630,100	2,596,291	68,457	150,469	1 12 6	6 10 0	41	73
Manchester and Birmingham	31	2,100,000	690,586	1,923,699	15,397	58,162	1 0 6	5 0 0	40	48
Manchester and Bolton	10	778,100	197,730	773,743	8,585	21,140	2 2 0	4 10 0	93	110
Manchester and Leeds and Hull	81	2,937,500	1,943,932	3,921,593	46,653	156,761	.....	7l. & 10l.	60	88
Midland railway	178½	5,158,900	1,719,630	6,279,056	76,983	281,898	.....	.....	100	96
Newcastle and Carlisle	61	878,240	188,563	1,135,069	26,499	73,947	4 0 0	4 0 0	100	105
Newcastle and Darlington	23	500,000	.....	495,728	.....	.....	.....	nihil.	21	49
Newcastle and North Shields	7	150,000	153,876	309,629	8,943	18,466	.....	2 0 0	50	37
North Union	39	739,201	308,306	1,015,447	9,071	37,794	2 10 0	6 16 8	100	104
Paris and Orleans	82	1,600,000	400,000	1,978,415	.....	.....	0 16 0	8 0 0	20	39
Paris and Rouen	84	1,440,000	.....	.....	31,247	91,171	.....	8 0 0	20	38
Preston and Wyre	19	830,000	179,852	355,161	4,191	7,066	.....	nihil.	50	18
Sheffield and Manchester	19	1,150,000	311,759	951,455	11,895	14,876	.....	nihil.	82	93
South Eastern	88	2,996,000	1,530,277	3,464,172	40,993	81,482	0 10 6	2 2 0	50	39
Taff Vale	30	465,000	154,785	590,006	8,509	18,414	1 0 0	6 5 0	100	55
Ulster	25	519,150	20,000	348,626	5,401	13,856	0 15 0	5 1 8	29	37
Yarmouth and Norwich	20½	187,500	62,500	230,250	.....	.....	.....	nihil.	16	25
York and N. Mid. and Leeds and Selby	28	1,062,500	167,500	676,644	27,132	55,752	2 10 0	10 0 0	50	100

NEW AND PROPOSED RAILWAYS.	Share Capital.
Aberdeen	1,600,000
Barnsley Junction	200,000
Belfast and Ballymena	385,000
Blackburn and Accrington	400,000
Birk. and Ches. Junction	1,000,000
Bolt., Wigan and Liverpool	800,000
Caledonian	1,800,000
Cambridge and Lincoln	1,250,000
Chatham and Portsmouth	5,000,000
Chester and Wrexham	120,000
Churnet valley	1,800,000
Direct Northern to York	4,000,000
Dublin and Belfast	950,000
Dundee and Perth	250,000
Edinburg and Northern	800,000
Ely and Bedford	270,000
Glosgow, Dum. & Carlisle	1,300,000
Gt. South and West Ext.	1,200,000
Gt. Grimsby and Sheffield	600,000
Harwich and E. coun. Jun.	160,000
Huddersfield & M. cl. & cl.	600,000
Kendal and Windermere	125,000
Leeds and Dewsbury	400,000
Leeds and Thirsk	800,000
Liv. Ormskirk and Preston	600,000
London and Portsmouth	1,750,000
London and York	5,000,000
Londonderry & Enniskillen	500,000
Lynn and Ely	200,000
Manchester, Bury and Ross	300,000
Manchester and Buxton	250,000
Mullingar and Athlone	.....
Newcastle and Berwick	700,000
Richmond & W. End Junc.	.....
Scottish Central	700,000
Sheffield and Lincolnshire	650,000
Shrewsbury and Gd. Junc.	400,000
Shrew. Wolv. Dudly & B.	900,000
Trent Valley	900,000
West London Extension	64,000
West Yorkshire	1,000,000
Whitehaven and Maryport	100,000
FRENCH RAILWAYS.	
Boulogne and Amiens	1,500,000
Central of France	1,280,000
Lyons and Avignon	2,400,000
Orleans, Tours & Bordeaux	2,000,000
Paris and Lyons	2,500,000
Paris and Orleans	1,600,000
Paris and Rouen	1,400,000

Steam and Miscellaneous.

NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p c. per ann.	Last price.	Present price.
Anglo Mexican Mint	10,000	10	10	.....	15⅛	15⅛
Anti Dry Rot	10,000	.....	18½	.....	2	.....
Australian Trust Company	5,700	100	35	.....	34½	.....
General hteam Navigation	20,000	15	14	10	27½	27
Gt Western Steam Pa	.....	.....	100	.....	25	.....
Metropolitan Wood-Pav	15,000	10	6	5	6⅜	.....
Patent Elastic Pav	10,000	1	1	5	1¾	.....
Peninsular and Oriental	11,493	50	50	7	64½	65
Ditto	3,200	50	40	7	.....	.....
Polytechnic Institution	.....	.....	.....	6	.....	.....
Reversionary Int. Soc	5,3	100	100	4½	104	104
R. Mail Steam Packet	15,000	100	60	.....	36½	37
South Western Steam	4,000	25	5	.....	.....	.....
Ship Owners' Towing	3,000	10	7½	10	15	.....
Thames Tunnel	4,000	50	50	.....	.....	.....
University College	1,500	100	100	.....	.....	.....
Canals.						
Ashby de la Zouch	1,432	113	av.	4	70	70
Barnsley	720	100	100	14	180	180
Birmingham, 1-16 share	3,000	118¾	79	10	150	160
Do. and Liverpool Junction	4,000	160	100	.....	13¼	13¼
Coventry	500	100	100	20	365	365
Cromford	460	do.	do.	24	250	250
Derby	680	do.	do.	9	105	105
Erewash	231	do.	do.	32	440	440
Forth and Clyde	1,297	100½	40½	4	440	440
Grand Junction	11,600	100	100	7	162	161½
Grand Surrey	1,500	do.	do.	.....	20	.....
Gloucester and Berkley	5,000	do.	do.	.....	8	8
Grantham	749	150	150	8	185	185
Lancaster	11,699	47½	47½	3	40	40
Leeds and Liverpool	2,897	100	100	34	640	640
Leicester	545	14	140	9	139	139

NAME OF COMPANY.	Num. of shares.	Am't. of share	Amount paid.	Div. p.c. per ann.	Last price.	Present price.
Loughborough	70	142½	142½	70	1140	
Monmouthseire	2,409	100	100	10	160	160
Melton Mowbray	250	100	100	10	117	117
Mersey and Irwell	500	100	100	10	.....	.....
Macclesfield	3,000	100	100	2½	15	15
Neath	247	100	100	17	365	365
Oxford	1,786	100	100	30	505	.....
Regents or Loncon	21,418	33⅓	33¾	2½	25	25
Shropshire	500	125	125	6	120	120
Somerset coal	800	150	150	7½	123	123
Stafford and Worcester	700	140	140	25	480	480
Shrewsbury	500	125	125	12	230	230
Stourbridge	300	145	145	14	360	360
Stroudwater	200	150	150	19	.....	.....
Swansea	533	100	100	15	240	240
Severn & Why & Rail Av.	3,762	26½	26½	5½	30	30
Trent and Mersey	2,600	50	50	65	495	.....
Thames and Medway	8,149	19¼	19¼	.....	10	10
Warwick and Birmingham	2,000	100	100	10½	167	.....
Warwick and Napton	980	100	100	8½	122	.....
Water Works.						
Birmingham	4,800	25	25	3½	28	28
East London	4,433	100	100	8	223	225
Grand Junction	5,500	av.	41 2-3	7½	88	90
New River L. B. Ann	1,500	.....	.....	2½	.....	.....
Manchester and Salford	6,486	av.	30	8½	57	57
Vauxhall, lt. S. London	1,000	.....	100	5	55	55
West Middlesex	8,294	av.	63⅜	6¾	126	127
Docks.						
Commercial Dock	1,065	100	100	3	80	.....
East and West India	.....	sto.	.....	5½	137	.....
London	3,238,310	sto.	.....	4½	114¾	115
St. Katharine	1,352,752	sto.	.....	5	116	171
Southampton	7,000	50	50	.....	.....	.....

AMERICAN STATE WORKS AND CANALS, ETC.

	STATE WORKS.	Length in miles.	Cost.	1843. Income.	1843. Expend.	1844. Income.	1844. Expend.
N. Y.	1 Black river canal	35	1,524,957	.....	.....	.....	.....
"	2 Cayuga and Seneca	21	237,000	16,557	10,953	24,618	14,443
"	3 Champlain canal	64	1,251,664	102,308	.....	116,739	.....
"	4 Chemung	23	684,600	8,140	14,486	14,385	12,740
"	5 Chenango	97	2,429,000	16,195	15,957	22,179	15,960
"	6 Crooked lake	8	156,777	461	3,674	1,498	3,951
"	7 Erie—enlargement of	363	12,618,852	1,880,316	.....	.....	.....
"	8 Genessee valley	120	3,739,000	.....	.....	.....	.....
"	9 52 miles opened, cost $1,500,000	.....	.....	12,292	13,819	19,641	15,557
"	10 Oneida lake	6	50,000	225	2,239	621	1,636
"	11 Oswego	38	565,437	29,147	22,742	56,165	28,599
Pa	12 Beaver division canal	25	.....	.....	.....	7,381	5,386
"	13 Delaware canal	60	.....	.....	.....	109,278	22,870
"	14 French creek	45	.....	.....	.....	.....	.....
"	15 Seneca river towing path	.....	69,276	.....	.....	381	.....
"	16 Columbia railroad	82	.....	.....	.....	443,336	205,067
"	17 Eastern division	36	.....	.....	.....	179,781	138,915
"	18 Juniata canal	93	.....	.....	.....	351,102	248,943
"	19 Portage railroad	130	.....	.....	.....	.....	.....
"	20 Western division canal	105	.....	.....	.....	.....	.....
"	21 North branch Susquehannah canal	73	.....	.....	.....	.....	.....
"	22 West " " "	72	.....	.....	.....	101,949	57,633
Ohio	23 Hocking canal	56	975,130	4,757	.....	5,286	4,139
"	24 Miami canal	85	1,660,742	68,640	38,826	77,844	22,341
"	25 Miami extension	105	2,856,636	8,291	.....	12,723	14,741
"	26 Miami northern division	35	322,000	.....	.....	unfin'd.	.....
"	27 Muskingum	91	1,627,318	23,167	.....	29,385	15,027
"	28 Ohio	334	4,600,000	322,754	123,398	343,711	113,210
"	29 Wabash	91	3,028,340	35,922	6,400	48,589	12,817
"	30 Walhonding	25	607,269	838	39,005	1,977	1,238
"	31 Western road	31	255,015	7,254	1,782	8,747	2,929
Ind.	32 Sundry works	.....	11,000,000	.....	.....	.....	.....
"	33 Maume canal	.....	.....	.....	.....	.....	.....
Ill.	34 Sundry works	.....	10,000,000	.....	.....	.....	.....
Mich	35 Central railroad	110	1,842,308	149,987	75,966	211,170	89,420
"	36 Southern railroad	68	936,295	24,064	7,907	60,341	70,000

The State Canals are all 4 feet deep, and the locks are 13 to 17 feet wide, and 80 to 90 feet in length.

The six millions paid to the canal fund from auction and salt duties are not included in the estimate of cost. The Genesee valley and the Black river canals require large sums for their completion, the interest of which *additional* sum is much greater than the estimated gross income of these canals when finished. The sums required to complete these two canals are $2,000,000 and $600,000, making their total cost when finished $5,553,000 and $2,409,000; an expenditure incurred on estimated incomes (admitted to be liberal,) of $39,000 and $14,000 respectively.

The total receipts from the works of Pennsylvania for 1843 were $1,019,401; for 1844 $1,161,326, and the cost about 30 millions.

The receipts for 1844 were as follows:

Canal tolls,	578,494
Railroad tolls,	252,855
Motive power,	319,590
Trucks,	13,477

of which $585,922 is from 118 miles of railroad, and $578,404 from 550 miles of canal.

The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 $471,623, and in 1844 $515,393, the cost, 1st Jan. '43 being $15,577,233. The increase of '44 over '43 is only $43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known.

These 21 millions on sundry works yield no income whatever.

The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.

	CANALS.	Length in miles.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.	REMARKS.
	Blackstone	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	Bald Eagle Navigation	25	400,000	.....	.....	.....	.....	.....	.....	.....	
	Beaver and Sandy, (part)	.....	1,000,000	.....	.....	.....	.....	.....	.....	.....	
	Charleston, (S. C.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	Chesapeake and Ohio	184	12,370,470	47,637	.....	.....	.....	.....	.....	.....	
	Conestoga	12	300,000	.....	.....	.....	.....	.....	.....	.....	
	Delaware and Chesapeake	13	.....	.....	.....	.....	.....	.....	.....	.....	
	Schuylkill	108	3,500,000	279,795	102,221	....	190,693	120,624	....	31	
	Farmington	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	James river and Kenhawa	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	Middlesex	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	Port Deposit	10	200,000	.....	.....	.....	.....	.....	.....	.....	
	Delaware and Raritan	43	2,900,000	99,623	53,327	....	131,491	84,455	....	.....	
	Southwark	.....	300,000	.....	.....	.....	.....	.....	.....	.....	
	Tide Water	45	2,900,000	.....	.....	.....	.....	.....	.....	.....	
	Union	80	2,000,000	.....	.....	.....	.....	.....	.....	.....	
	Morris	101	1,000,000	.....	.....	.....	.....	.....	.....	28	
	Dismal Swamp	.....	.....	.....	.....	.....	.....	.....	.....	.....	

We may, perhaps, at some future time be enabled to give the particulars of all these canals.

The Chesapeake and Ohio canal is not yet completed to the coal mines, hence its trifling income.

The enlargement of the Schuylkill canal has been commenced.

The Morris canal was lately sold for one million, about one-fourth of its cost. It is said in the papers that it is to be enlarged. We have seen no report, nor heard of the appointment of any engineer.

CANADIAN CANALS.	Length in miles.	No. of locks.	Lockage in feet.	Size of locks. Length of chamber.	Size of locks. Width.	Size of locks. Depth on mitre sill.	Width of canal. Bottom.	Width of canal. Surface.	Estimate.	Expended to Sept. 1843.	Income. 1843.	Income. 1844.
The Welland canal	.....	.....	.....	feet.	feet.	feet.	feet.	feet.	3,948,572	2,485,572	64,658	
Main trunk from Port Colborne to Port Dalhousie	28	31	328	150	26 1-2	8 1-2	45	84	.....	.....		
Junction branch to Dunville (not added below)	21	1	6	150	26 1-2	8 1-2	35	71	.....	.....		
Broad creek branch to Port Maitland (not added below)	1 1-2	1	6	200	45	9	45	85	.....	.....		
The St. Lawrence canal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Galops and Port Cardinal	2	2	7	200	45	9	50	90	.....	.....		
Rapid Plat	4	2	11 1-2	200	45	9	50	90	672,498	973		
Farren's point	3-4	1	3 1-2	200	45	9	50	90	.....	.....		
Cornwall, passing the Long Sault rapids	11 1-2	7	48	200	55	9	100	150	865,372	1,665,663		
Beauharnois, do. Coteau, Cedars and Cascades road	11 1-4	9	82 1-2	200	45	9	80	120	1,190,687	275,426		
Lachine, do. Lachine rapids	8 1-2	5	44 1-2	200	45	9	80	120	old canal.	400,000	29,288	
Elargement of do.	.....	.....	.....	.....	.....	.....	.....	.....	1,001,333	64,439		
Total from lake Erie to the sea	12	57	325									
Chambly	66	9	74	120	24	6	36	60	200,000	440,000	1,409	

COAL COMPANIES.	Length in miles R. rd.	Length in miles Canals.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.	REMARKS.
Delaware and Hudson	16	108	2,800,000	930,203	196,702	10	.....	.....	.....	130	
Lehigh	20	72	6,000,000	.....	.....	.....	.....	.....	.....	31	

AMERICAN RAILROADS.

		RAILROADS.	Length in miles.	Cost.	Loans and debts.	Number of shares.	Paid on share	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Previous prices	SALES. Week ending May 27th. Shares.	Price
Me.	1	Portland, Saco and Portsmouth	50	1,200,000				89,997	47,166	7	124,497	74,841	6	113½		
N. H.	2	Concord	35	750,000									12	70½		
Mass.	3	Boston and Maine	56	1,485,461				178,745	68,499	6	233,101	86,401	6½	110¾	15	117
"	4	Boston and Maine extension	17 1-4	455,703	unfin.											
"	5	Boston and Lowell	26	1,863,746				277,315	144,000	8	316,909	147,615	8	120¼		
"	6	Boston and Providence	41	1,886,135	none.	18,600	100	233,388	110,823	6	282,701	156,109	6	108¾		
"	7	Boston and Worcester	44	2,914,078				4 0,141	162,000	6	428,437	195,163	7½	116½	52	118½
"	8	Berkshire	21	250,000	not stated				17,500	7	17,737					
"	9	Charlestown branch		280,260						13	34,654	13,971	5½	70½		
"	10	Eastern	54	2,388,631				279,563	140,595	6	337,238	227,920	8	109¾	15	112
"	11	Fitchburg	50	1,150,000	just opn'd						42,759	26,835		120	6	122½
"	12	Nashua and Lowell	14 1-2	380,000				84,079		8	94,588	34,944	10	121		
"	13	New Bedford and Taunton	20	430,962				50,671	24,000	6	64,998	24,000	6			
"	14	Northampton and Springfield		172,883	unfin.											
"	15	Norwich and Worcester	59	2,170,366	900,000	16,535	100	162,336	24,871		230,674	99,464	3	70½	10,060	71½
"	16	Old Colony		87,820	unfin.									102	9	109
"	17	Stoughton branch	4	63,075	unfin.											
"	18	Taunton branch	11	250,000					20,000	8	96,687	20,000	8	118		
"	19	Vermont and Massachusetts														
"	20	West Stockbridge	3	41,516	200		100						4			
"	21	Western, (117 miles in Mass.)	156	7,686,202	4,686,202	30,000		573,882	284,432		753,753	439,679	3	102½	261	104
"	22	Worcester branch to Milbury		8,431	506											
"	23	Housatonic, (10 months,)	74	1,244,123							150,000			82	40	30
Co'n	24	Hartford and New Haven	38	1,100,000	100,000	10,000	100						6	89		
"	25	Hartford and Springfield	25 1-2	600,000	400,000	2,000	100									
"	26	Stonington, (year ending 1st Sept.,)	48	2,600,000	650,000	13,000	100	113,889			154,724	79,845		41	2,680	35
N.Y.	27	Attica and Buffalo	31	336,211				45,896	7,522		73,248	48,033	0			
"	28	Auburn and Rochester	78	1,796,342	200,000	14,000	100	189,693	112,000		237,667	152,007	6	106	37	107½
"	29	Auburn and Syracuse	26	766,657			133½	86,291	27,334		96,738	52,544	6	116		
"	30	Buffalo and Niagara	22	200,000		1,500								100		
"	31	Erie, (446 miles,)		5,000,000										31½	785	30½
"	32	Erie, opened	53						48,000		126,020	59,075				
"	33	Harlem	26	1,206,231							140,685	62,399		70	2,750	71½
"	34	Hudson and Berkshire	31	575,613			50				35,029	1,999	0	14		
"	35	Long Island	96	1,610,221	392,340	29,846					153,456	58,766	0	75½	4,060	71½
"	36	Mohawk and Hudson	17	1,317,893	400,000	10,000	100	69,948	58,780		79,804	45,763	0	64½	975	60
"	37	Saratoga and Schenectady	22	303,658				42,242	3,000	1	34,666	8,455	0			
"	38	Schenectady and Troy	20 1-2	640,800				28,043			32,646	6,365	0			
"	39	Syracuse and Utica	53	1,115,897	none.	16,000	62½	163,701	72,000		192,061	120,992	8	115	30	116
"	40	Tonnawanda	43	727,332				76,227			114,177	75,865	5			
"	41	Troy and Greenbush	6	180,000												
"	42	Troy and Saratoga	25	475,801				44,325	21,000		38,502	9,971	2½			
"	43	Utica and Schenectady	78	2,168,165	none.	20,000	100	277,164	180,000	9	331,932	199'094	8	129		
N.J.	44	Camden and Amboy	61	3,200,000				682,832	383,880		784,191	404,956		110¾	2	110
"	45	Elizabethtown and Somerville	26													
"	46	New Jersey	34	500,000										93½	56	95
"	47	Paterson	16	2,000,000									6	85		
Pa.	48	Beaver Meadow	26	500,000												
"	49	Cumberland Valley	46	1,000,000												
"	50	Harrisburg and Lancaster	36	1,250,000										30		
"	51	Hazleton branch	10	860,000												
"	52	Little Schuylkill	29	120,000												
"	53	Blossburg and Corning	40	900,000												
"	54	Mauch Chunk	9	600,000												
"	55	Minehill and Schuylkill Haven	18	100,000						12				143½		
"	56	Norristown	20	315,000										6½		
"	57	Philadelphia and Trenton	30	800,000										104		
"	58	Pottsville and Danville	29 1-2	400,000												
"	59	Reading	94	1,500,000	7,447,570	40,200	50				597,613	343,511		50½	1,000	49
"	60	Schuylkill valley	10	9,457,570												
"	61	Williamsport and Elmira	25	1,000,000				20,000								
"	62	Philadelphia and Baltimore	93	400,000				43,043	200,000			210,000		43½	5,156	18⅞
Del.	63	Frenchtown	16	1,400,000												
Md.	64	Baltimore and Ohio, (1st Oct.)	188	600,000				575,235	279,402		658,620	346,946		48½		
"	65	Baltimore and Susquehanna	58	7,623,600										5		
"	66	Baltimore and Washington	38	3,000,000				177,227	71,691		212,129	104,529		84		
Va.	67	Greensville and Roanoke	17 12	1,800,000												
"	68	Petersburg and Roanoke	60	260,000							122,871	72,898	3			
"	69	Portsmouth and Roanoke	78 1-2	969,880												
"	70	Richmond and Fredericksburg	61 1-2	850,000												
"	71	Richmond and Petersburg	22 1-2	1,200,000												
"	72	Winchester and Potomac	32	700,000												
N. C.	73	Raleigh and Gaston	84 1-2	500,000												
"	74	Wilmington and Raleigh	161	1,360,000												
S. C.	75	South Carolina	136	1,800,000		34,410	75				532,871	140,196	5			
"	76	Columbia	66	5,671,452				201,464	77,456		328,425	180,704				
Ga.	77	Central	190					227,532	93,190							
"	78	Georgia	147 1-2	2,581,723				248,026	158,207		248,096	147,523				
"	79	Montgomery and West Point	89	2,650,000	170,000		100				35,000	15,000				
Ky.	80	Lexington and Ohio	40	500,000												
Ohio	81	Little Miami	40	450,000												
"	82	Mad river	40	400,000												
Ind.	83	Madison and Indianapolis	56	152,000												
Can.	84	Champlain and St. Lawrence	15	212,000					12,000		58,000	24,000		110		

Correspondents will oblige us by sending in their communications by Monday morning at latest.

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AMERICAN RAILROAD JOURNAL.

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Thursday, May 29, 1845.

CLEVELAND, COLUMBUS AND CINCINNATI RAILROAD.

Since the article in relation to the Sandusky and Cincinnati railroad was written, we have received the Delaware (Ohio) Gazette, in with we find an account of "a meeting of the commissioners appointed by the general assembly at the last session, for the organization of the Columbus railroad company, the Cleveland, Columbus and Cincinnati company, and the Columbus and Sandusky company, held at Mansfield on the 1st day of May, 1845, in pursuance of previous notice: John W. Allen, of Cleveland, was appointed chairman, and D. T. Fuller, of Delaware, secretary.

"After a discussion of the several charters and routes between Cincinnati and Columbus and the lake, on motion of S. Finch, of Delaware, a committee of two commissioners named in each charter was appointed by the chair, to examine the several charters, and report under which it is expedient to organize—also, to report upon such other matters as they may deem advisable. Under this resolution, the chairman appointed Sandford S. Bennett, George H. Busby, Irad Kelley, James Purdee, Sherman Finch and Hiram Randolph; and, on motion of Jas. Purdee, the chairman was added to the committee, and the meeting adjourned to 3 o'clock, P.M.

3 o'clock, P. M.

"The meeting was again organized, and the committee appointed in the morning made a written report, recommending that a company be formed under the Cleveland, Columbus and Cincinnati charter, and the amendments thereto made at the last session of the legislature, and that the commissions of that company cause books to be opened for subscriptions for the stock necessary for the construction of a road from Cleveland to Columbus; which report was accepted, and so it was determined by the commissioners of the three routes, that that terminating at Cleveland should be adopted.

"The commissioners on the Cleveland, Columbus and Cincinnati route, subsequently stated that they had fixed on the 3d Monday in June for opening books and subscriptions to the stock, at the following places, and under the direction of the gentlemen whose names are annexed to each, viz:

"At Cleveland, Richard Hillard, T. P. Handy and Philip Scoville. At Columbus, Sam'l Medary, Joseph Ridgway, Jr., and Wm. Dennison, Jr. At Strongsville, in Cuyahoga county, David Harvey and Harman Stone. At Medina, David King, U. H. Peak and S. N. Sargeant. At Blyria, Artemas Bebee, E. W. Hubbard and H. Ely, Jr. At Ashland, in the county of Richland, Charles R. Deming and John P. Reznor. At Mansfield, James Purdee and E. W. Lake. At Lexington, in the county of Richland, J. F. Adams and A. Abernethy. At Shelby, Richland county, Robert Lee and Thomas Mickey. At Marion, E. Hardy, S. S. Bennett and Wm. Bain. At Mt. Gilead, in Marion county, J. B. Shaw, Nathan House and S. Gellen. At Delaware, S. Finch, H. Williams and B. Powers. At Eden, in Delaware county, S. Scott, H. E. Randolph and Israel Potter. At Bucyrus, Josiah Scott, John Caldwell and Samuel Myers. At Auron, Josiah Tracey and Tower Jackson.

"Also resolved, that Sherman Finch, Hosea Williams and Benjamin Powers, of Delaware, be a committee of correspondence with authority to call subsequent meetings of the commissioners, when they shall deem it expedient."

These two lines from Sandusky and from Cleveland to Cincinnati, appear to be competing lines.

We take it for granted that the "Mad river and Sandusky" line will be completed at all events, and connected with the Miami road, and thus open a line from the lake to the Ohio at Cincinnati. Of course a line from Cleveland, through Columbus, will not be very far distant, at least for a part of the way, from the Mad river road—it would therefore seem to us good policy to run westerly from Cleveland, and connect with the Mad river road, and thus open a continuous railroad to Cincinnati, and at the same time a portion of the Great Western Railroad from New York to the Mississippi. We do not however pretend to put our limited knowledge of the matter in competition with those who are familiar with it, but rather make these remarks to elicit the facts. We shall of course go for the earliest possible completion of a railroad from the lake to the Ohio at Cincinnati, and then for another further east.

CENTRAL RAILROAD, MICHIGAN.

"By the accompanying table," says the Detroit Free Press, "it will be perceived that the receipts for *freight* for the first five months of the present fiscal year are less than one-half of those for the same period of the preceding year, owing to the great falling off last season in the usual wheat-crop in this State. The receipts for *passengers*, however, it will be seen, are increased about in proportion to the extension of the road since last spring. Although the aggregate receipts for the first five months of this year are over $16,000 short of last year's receipts for the same period, yet it will be seen that they are nearly double what they were in the same period year before last, when the receipts for the year fell only a few dollars short of $150,000. If our farmers are blessed with as good a crop of wheat this season, as there is now every reason to anticipate, and from the flattering prospect of increased travel on the road, we see no reason to doubt but that the receipts for the year will yet come nearly or quite up to the estimate of the board of internal improvement in their last annual report, which was $275,000.

Receipts on this road for the first five months of the three last fiscal years:

	Freight.	Pass'grs.	U. S. M.	O Ir'n	Total.
Dec. 1842	$3.322 77	2.025 14	.....	.....	5,347 91
Jan. 1843	2.413 04	1,320 26	521 39	.....	4.254 69
Feb. do	1.502 19	1.276 73	.....	.....	2,778 92
Mar. do	2,540 28	1,486 74	.....	.....	4,027 02
April, do	2,579 49	1,798 47	1,211 37	.....	5,589 33
1st 5 mos. '42-3.	12,357 77	7,907 34	1,732 76	....	21,997 87
Dec. 1843	8,049 12	2.568 02	.....	.....	10,617 14
Jan. 1844	8.265 95	2,942 37	520 55	90 00	11,818 87
Feb. do	7.895 31	2,311 84	.....	160 70	10,367 89
Mar. do	5.391 38	2.685 02	1,321 92	.....	9,398 32
April, do	8.514 38	5.604 47	.....	57 00	14,175 85
1st 5 mos. '43-4.	38,116 14	16,111 76	1,842 47	307 70	56,378 07
Dec. 1844	4,469 66	3,454 08	697 69	.....	8,621 43
Jan. 1845	2.457 31	3,404 24	551 28	.....	6.412 83
Feb. do	2,483 84	3,241 23	1,455 99	27 41	7,303 47
Mar. do	2.926 80	3,950 53	.....	100 42	6,977 81
April, do	4.911 89	6,076 70	588 46	.....	11,607 11
	17,279 50	20,226 90	3,293 42	127 83	40,927 65

This is one of the very few cases in which the business of a railroad has fallen off this year, as compared with last year. It is however accounted for in the short crops of wheat in 1844. We look confidently however to a much better comparative statement at the close of the year.

☞ *One word to the* editorial corps of Detroit.—These extracts are made from the *only Detroit* paper which has come to us in years—and this appears to have come from a friend, "S. S.," who will please accept our thanks for giving us an opportunity to speak of the railroads in Michigan. We have frequently sent the Journal to the Detroit papers, and requested an exchange, but whether we are to place their "declinature" to the account of the high estimation in which they hold their own papers, or the low estimation of ours, or *both*, we are at a loss to determine, and will not ask, as we have no hesitation to say that we can be quite as useful to them as they to us—yet we should be well pleased to receive a paper from Detroit, that we may be able to speak of their public works occasionally as they merit.

THE COAL TRADE.—SCHUYLKILL VALLEY.

The demand for coal continues brisk, and the red ash men are now busy in supplying the orders for New York dealers, the demand for this kind of coal having commenced much sooner this year than last.

The rails on the Schuylkill valley railroad are now laid as far up as New Philadelphia, and the shipments from that quarter are rapidly increasing.

The bridge over the Schuylkill and the laying of the rails through the deep cut on the Mill creek road will be completed to-day or Monday, giving access to several of the collieries on the Mill creek for shipments. The whole road, it is believed, will be completed in the course of next week.

The shipments by railroad are increasing considerably, reaching 15,549 02 tons this week. By canal, 5,748 10. Total for the week, 21,297 12 tons.

Freights to Philadelphia 70 cts., to N. York, $1·80.

By railroad, from Pottsville and Port Carbon $1·10—from Schuylkill Haven, $1, toll included.

Sent by railroad from Pottsville and Port Carbon—total tons.... 66,620·09
From Schuylkill Haven—total tons.... 114,000·05
From Port Clinton.... 920·04

Total.... 181,570·18

BY CANAL.

From Pottsville and Port Carbon—total. 3,4311.05
From Schuylkill Haven—total.... 6,488·00
From Port Clinton—total.... 10,397·18

Total by canal.... 51,197·03
Total by railroad.... 181,570·18

Total by railroad and canal.... 232,768·01

LEHIGH COAL TRADE.

Total shipments from Mauch Chunk. Lehigh coal and navigation co.
Summit mines, - - - 30286
Room run do., - - - 8816—39102
Beaver Meadow railroad and coal co., 12782
From Penn Haven—Hazleton coal co., 11230
From Rock Port—Buck Mountain coal co., 3436

PINE GROVE COAL TRADE.—On Union canal railroad to 15th May—total tons.... 9485
On Swatara railroad—total tons.... 4472

WYOMING COAL TRADE—total.... 13186

MINEHILL AND SCHUYLKILL HAVEN RAILROAD—total tons.... 119,749·04

MOUNT CARBON RAILROAD—total tons.. 70,430

The doctrine of "low fares and high speed for passengers" is becoming the order of the day, and must prevail. The Railway Times of May 3d, says—"The Eastern Counties railway company have announced their intention of reducing their fares and increasing the speed of their trains."

ATMOSPHERIC RAILWAY.

It will be recollected by our readers that we gave, in the last August number of the Journal, numerous engravings and full descriptions of the atmospheric railway, as put in operation by Messrs. Clegg & Samuda, from Kingston to Dalkey, in connection with the Dublin and Kingston railway. It will also be recollected that those two eminent engineers, Messrs. *Brunel* and *Stephenson*, took opposite sides on the subject, and that each based his opinions on actual experiments made by themselves on the road. Of course there has been no little interest felt in the result of the year's operations; and we are gratified in being able to give the annual report of the directors, which is highly satisfactory and instructive—establishing beyond a question the correctness of the policy adopted by that company—and *should be by all others*—"of endeavoring to create a traffic, and to increase it to the greatest extent, by affording to the public the *utmost possible accommodation at the very lowest rates.*" We ask for this report an attentive perusal by all who take an interest in the success of railroads in this country, as we are now again upon the threshold of a rapid extension of—and, we hope, important improvements in—the railroad system generally. It needs not the wisdom of a prophet, or the son of a prophet—nor do we claim the honor of being either the one or the other—to predict, that, in a few years, the railroad interest of this country will become one of the predominant and overshadowing interests of the country; hence the *necessity* of its being properly managed and governed in its infancy.

ATLANTIC STEAM NAVIGATION CO.

We copy the following letter in relation to this important matter from the Journal of Commerce. We shall now see *American* Atlantic steam ships. There is, at times, *much* in a name—even if it be rarely met with—as we shall learn ere long in this case; and we trust that our government will contribute largely to the success of the enterprize, and thus ensure the construction of a class of ships, which may be at once turned, if necessary, into efficient steamships of war, a species of defence in which we are, in comparison with other nations, sadly deficient.

"The public are aware that the State legislature, with a promptitude and liberality which call for our warmest acknowledgments, granted the above named company an act of incorporation, the particulars of which, for general information, I beg to subjoin.

"The act designates the name of the company, which is to continue for twenty-four years from the present time.

"The capital stock of the company is to be two millions of dollars, in shares of one hundred dollars each, for the purpose of carrying on foreign steam navigation.

"The company may commence operations when five hundred thousand dollars are subscribed.

"The directors, twelve in number, and enumerated in the act of incorporation, are to open subscription books for said capital stock in the city of New York, giving fourteen days' previous notice, for such amount of stock as they may require, and the same notice for an extension of the stock from time to time, as the directors may deem expedient.

"Within twenty days after said subscription, a deposit of five per cent. upon which is to be made at the time of subscribing, the directors are to make an allotment of the shares to the subscribers, in such manner as the majority of them shall deem most advantageous to the interests of the company.

"The twelve directors to be elected annually by the stockholders; any six of them, the president being one, to form a quorum for the transaction of the business of the company.

"Dividends of the profits of the company to be made semi-annually, in January and July.

"The act to take effect immediately.

"Your obedient servant,

"15th May, 1845. JUNIUS SMITH."

AMERICAN LOCOMOTIVES.

We copy the following article in relation to the performance of the locomotive *Atlantic*, on the Reading railroad, from the *Philadelphia North American*, of the 17th inst. It is another evidence of the enterprize and skill of American mechanics: and such an one as we are always pleased to record, by whomsoever given.

"To exhibit the unrivalled skill of Philadelphia mechanicians in a very important branch of manufacture, and to afford a satisfactory answer to the calls for information relating to the performance of locomotive engines on the Reading railroad, and the extraordinary power of those built by Messrs. Norris, Brothers—we have, on application to those gentlemen, been favored with a letter addressed to them by the able engineer, who is superintendent of the Reading railroad, giving a statement of the performance of the "*Atlantic*," on the 3d inst.—this performance far exceeding anything on record, and fully sustaining the high and well earned reputation, at home and abroad, of the builders.

"The great advantages which Messrs. Norris have gained in the peculiar construction of their six wheel combined engines, in overcoming friction, at all times having the whole adhesion of the engine, the weight being equally distributed upon the rail, and an easy passage through curves of short radii, has been fully proven by the performance referred to of the "*Atlantic*;" showing, conclusively, that an engine built upon Messrs. Norris' plan is capable of doing more work than engines weighing 4,000 pounds more.

"The six driving wheels are placed in an independent, flexible, vibrating truck, equal distances apart, the power applied directly to the centre pair of wheels, and the truck is so constructed that the wheels are allowed to assume any position upon the rail, occasioned by unevenness of the road, without producing an extra strain or friction upon the machinery, or binding of the flanges upon the rails, when passing through short curves."

(COPY.)

MESSRS. NORRIS, BRO'S—

GENTLEMEN: On the 3d inst. the engine "Atlantic," built by you for our company last year, made the following performance on the Reading railroad:

She left Schuylkill Haven, one of the termini of our road in the coal region, at 9 38, A. M., with a train of 158 coal and other cars, all loaded, and arrived at the Falls of Schuylkill, near Richmond, our Delaware terminus, at 8 30, P. M., with the above train, of which the following are the particulars:

Length of train, 2020 feet.

Weight of coal, 740 tons, of 2240 lbs.

Total weight of cars and coal, exclusive of engine and tender, 1268 tons, of 2000 lbs.

Running time, 8 hours 3 minutes.

Total time, including stoppages, 10 hours 52 minutes.

Wood used, 1035 cubic feet, or 8·09 cords.

Water used, 8659 American gallons.

Total distance run, 84 miles, of which 40 miles were level: and one continuous level of 8 miles long.

The train was started with ease twice, on a level. The engine weighs $15\frac{8}{10}$ tons; six 46 inch wheels, all coupled; cylinders, $14\frac{1}{2}$ X 20 inches.

The engine performed with perfect ease to herself, during the whole trip; turned curves of 700 feet radius, with facility; and brought up 110 empty coal cars in her regular trip on the road next day.

I should think her capable of hauling some twenty more coal cars in addition to the above trains.

I am, very respectfully, yours,

(Signed) G. A. NICOLLS,

Sup't transportation machinery and motive power, Philadelphia and Reading railroad.

READING, Penn. U. S.
May 8, 1845.

We cut the following from the Portsmouth (Ohio) Tribune, and fully concur with the writer, that "the west," nor the east either, "need to depend on the English manufacturers for railroad iron." We shall ere long be able to manufacture, not only our own railroad iron, but also all other kinds of iron required in the country. We have the raw material in the greatest abundance, and also ample capital and Yankee enterprize and skill to meet *any* demand, and only require to *understand* our own resources and ability

to accomplish anything we may be disposed to undertake to ensure ample supplies for all purposes.

"RAILROAD IRON, ETC.

"It is a fact, as we believe, not generally known, that considerable railroad iron has been manufactured in Portsmouth, Ohio, probably the first, also, that was manufactured in the United States. In October, 1841, T. G. Gaylord & Co., at their rolling mills, made over *one hundred tons* of rails for the Madison and Indianapolis railroad, and some *sixty tons* for the Little Miami railroad. Twenty-five tons of spikes for the former road have also been made, and fourteen tons of cast iron chairs for rails for the latter. Although no great profit was realized from this manufacture (at $60 the ton,) and the proprietors of the mills declined a subsequent offer for a bill of 2500 tons of rail, principally from want of time to fill the order, yet enough has been done to show that there is no need of *the west* depending on English manufacturers for railroad iron.—That the increasing demands of the west for this kind of iron, will, ere long, call into operation the means of supply, near home, can no longer be doubted."

SANDUSKY AND CINCINNATI RAILROAD.

We find in the Cincinnati Gazette, of 13th inst., the following cheering indications that Ohio is moving vigorously in relation to her railroads, from lake Erie to the Ohio river, at Cincinnati, the "queen city of the west." It *must* be so. *In the nature of things it cannot be otherwise*, but that the State of *Ohio* will, in a few years, not only have at least two, if not three lines of railroad, besides her canals, from lake Erie to the Ohio river, but these roads will be intersected nearly at right angles, by at least *two* lines from *east to west:* one near the lake, in connection with the roads from the *city of New York*, and the other in connection with the *Baltimore and Ohio railroad*. These two great rival lines from the Atlantic to St. Louis, or some other point on the Mississippi, *must* pass through Ohio.

"OUR RAILROAD.

"The directors of both branches of the Sandusky and Cincinnati railroad are taking action upon the loan, and preparing to go to work.

"Mr. Mills has just returned from the north. Mr. Shoemaker accompanied him. The president and directors mean to put their road under contract to Urbana, and to complete it to Springfield with all proper despatch. Mr. S. is here to make arrangements, we learn, with regard to the purchase of iron.

"The president and directors of the Little Miami are now (Saturday morning) in session. They are preparing the necessary papers to perfect the loan, and making ready for efficient action in extending and completing the road. No time will be lost, either in neglecting what should be done, or in attempting what cannot be safely accomplished. Their aim will be to complete the road at the earliest practicable period."

WHITE WATER CANAL.

The Cincinnati Gazette has the following very just remarks in relation to the benefits resulting from internal improvements, or *canals and railroads*. It is true, as the editor remarks, that there has been much mismanagement in their construction—we say a great waste of public money, which would not have been done with private funds—yet, with all the errors, and losses, and disappointments, the country will be, and indeed *now is*, far more wealthy, and prosperous, and powerful, with her present canals and railroads, even if their cost had been paid by a *tax upon the property* of the country, and tolls only sufficient were charged to pay their current expenses, or keeping them in repair—yes, even if they had cost *double what they have*. Says the Gazette,

"The White Water Valley canal is fast progressing to completion, and will, in all human probability, be ready for the fall business to Cambridge city. Already, we understand, has the water been let in at the feeder dam just below Connersville. The aqueducts over Garrison creek, just above Laurel, and over White Water, just below Laurel, will be the last work finished this side of Connersville. But we understand these aqueducts will be done in the month of May. We presume, therefore, that we shall have an opportunity of celebrating the 4th of July with our friends at Connersville by water communication.

"With all the burden and disgrace of a public debt which we *do not pay*, we would this day rather it should continue to hang over us than to dispense with the benefits and conveniences of the White Water canal. We were always in favor of internal improvements, and with all its unpopularity, we are not yet ashamed, or regret that we advocated such a scheme. We know it was wrongly managed, but this we never countenanced or apologised for. The White Water canal will make this valley the richest and most independent part of the world. We are yet young, but with our fertile soil—rich and inexhaustible—there is nothing to impede our progress to wealth the most unbounded. When we recollect what has been done in this valley within the last 25 years, who can estimate the wealth, splendor and magnificence which shall beautify and adorn it in 50 years? Mansions and fine private dwellings will displace the cottage farm house, as they have driven out the log cabin, and our posterity will enjoy in luxury our labors and the toil of our fathers. But without some great public improvement we could never have been anything but hewers of wood and market pedlars. Few of us fully appreciate the benefits of canals, railroads and turnpikes."

RAILROADS IN NEW ENGLAND.

The vigorous movements of the New England people at this time in relation to the construction of railroads northwardly from Boston, Hartford and Portland, indicate a spirit of enterprize characteristic of the descendants of the pilgrims. There are now three distinct lines—we may say *four* a part of the way—upon which great efforts will be made by the inhabitants near them, and by their respective friends in the cities in which they are designed to terminate, for an early breaking of ground, and prosecution of the work.

There cannot, we are *sure*, be a doubt of the construction of a railroad up the valley of the Connecticut river, in continuation of that now in course of construction to Northampton—at least as far as the mouth of White river, and thence to Burlington via Montpelier, and probably to Wells' river and still higher up. To doubt this, would be a *libel* on the character of the people of that beautiful valley. We know them too well to believe that those who were first, and foremost, and deepest in the Merino sheep trade, in its earliest history in this country, will be the last to avail themselves of the advantages of *railroads*.

There will also, and of *course*, be a railroad to Brattleboro' in continuation of the Fitchburgh road, which will find its way across the Green mountains at some favorable point before it reaches Windsor, and thence to *Rutland* and *Burlington*. To doubt this would be a libel upon the people of Boston—than whom, we would sooner libel any other people on earth: as we cherish—though almost an entire stranger to their persons—a high admiration of them, or rather of their acts.

There will most assuredly be also another line from the Fitchburgh road, through *Keene* in New Hampshire, to Bellows Falls, in Vermont, or to some point above there. Of this we feel assured: first, from the determination manifested by the Keene people who attended the convention in Boston last September, for the purpose of extending the Fitchburgh road northward—as well as from the present movements of the people on the line. We well recollect the assurance given by *Mr. Edwards*, of Keene, who desired a suspension of action, when the convention decided to act under the call, which was for the purpose of taking means to construct a road to Brattleboro' from Fitchburgh. He told them that on the day they were ready to run cars from Fitchburgh, *around* New Hampshire, through Brattleboro' to Bellows Falls, they, the New Hampshire people,

would have a road ready for cars to pass in a much more direct line from one of those places to the other; and their movements have been in accordance with that assurance; and the road will be built at an early day. It is not yet certain whether these two lines will unite there, and pass up the valley of the Connecticut on the east or west side, to the mouth of White river, or whether there will be one on each side of the river. Time will determine.

After these—and *possibly before them*—will be the road from *Concord*, in New Hampshire, in continuation of the Lowell and the Nashua and Concord roads, to the mouth of White river, opposite Lebanon, there to connect with the Connecticut valley road, *or* up the valley of the Merrimac, to Meredith bridge, and Plymouth, and thence to Haverhill and Wells river—*or perhaps both*—and thence to Burlington and Canada line somewhere. This road must be built by the people on its line, and those interested in the three roads from Boston to Lowell, Nashua and Concord, unless they are willing to give up the main travel and business from Canada, which would of course take the railroad down the Connecticut valley, unless there was one equally favorable over this route. These considerations, we hold, are quite sufficient to ensure the early *commencement* and eventual completion of these lines. Boston is deeply interested in them; indeed she will be under the necessity, and not without the inclination, of putting her broad and vigorous shoulders to the wheel, to prevent, *if possible*, the construction of a railroad from Portland to Montreal, and thus prevent the business and travel of the Canadas to the mother country, from reaching the Atlantic without her deriving toll from it, as is now the case. A few years—less than ten—will see the cars passing over them at the rate of twenty miles an hour; but even that, with all the counter interest of Boston, will not, we think, prevent the construction of another, and a *shorter* line from the Atlantic to the Canadas. Portland, though comparatively small, will make a vigorous, and we think a successful effort to become the sea port of the Canadas: and many people will pass from Montreal to Boston, and the reverse, by the way of Portland.

The annexed extracts show that the people are moving in the valley of the Connecticut, as well as in the valley of the Merrimac.—The first is from the Boston Courier, and says that,

"A meeting of those in favor of extending railroad communication from the southern part of the State of Vermont, up the valley of the Connecticut river, is called at Windsor, Vermont, on the 11th day of June next. 'to take measures preparatory to the immediate opening of books for subscriptions to the capital stock of the Connecticut and Passumpsic river railroad company; and to take such other measures as may be deemed expedient to hasten the commencement and completion of a railroad, under the charter of said company—a road which will, in its course, connect with, or intersect the routes of the following roads, either now in progress of construction or contemplated, viz: the Greenfield and Northampton, the Vermont and Massachusetts, the Cheshire, the Champlain and Connecticut river, and the Vermont Central, and which will open a direct medium of communication between Montreal, on the one hand, and Boston and New York on the other.' The call is signed by the mayor and other gentlemen of Hartford, Ct., by the president of the Western railroad, and citizens of Springfield and Northampton, and by some of the principal citizens of Brattleboro', Windsor, Putney, Hartland, Hartford, Norwich, Thetford, Bradford, and Barnet, Vt."

The next is from the New Hampshire Patriot, of May 22d, and says,

"In the case of the Northern railroad, the report of the railroad commissioners is in favor of the route from Concord, by way of Franklin, Andover, Wilmot, etc., to Lebanon; but the commissioners state that they have examined another route, which, starting at Concord, strikes Contoocook river, at Horse hill bridge; thence to the Blackwater and up that stream until it meets the route proposed by the corporation. The distance is stated to be five miles shorter by this route. The report suggests to all concerned whether the interests of the corporation and the public would not be promoted, by making the main road on the Blackwater route, and extending a branch by Fishersville and Boscawen Plain to Franklin. The highest grade on the route of the Northern railroad is said to be 52·80 feet per mile.

"In the case of the Boston, Concord and Montreal railroad, the report fully adopts the route proposed by the corporation, which passes out of Concord near Federal bridge; thence through Canterbury to Sandbornton bridge; thence to Meredith bridge and village; Holderness village, Plymouth, etc., to Haverhill, and thence up the Connecticut river to some point, on the west bank, near Wells river, 'or to such other point on the west bank opposite Haverhill or Littleton, or any town on said river between those towns as may be judged necessary to meet a railroad constructed, or to be constructed, in the State of Vermont.' It is stated that the highest grade on this route will not exceed 45 feet to the mile.

"Both reports were fully approved by the governor and council."

GREAT WESTERN (CANADA WEST) RAILWAY.

We find the following statement in the Hamilton Gazette of 19th inst., and copy it at length, that our readers may be familiar with the railroad movements in Canada, as well as in the States. By referring to the map it will be seen that the distance from Albany to Detroit is much less by this than by any other route; and that, by the construction of this road, it will become a thoroughfare for the people of Michigan, Wisconsin and the northern part of Illinois and Iowa, which will ensure it a large and increasing business. The charter has been recently renewed with liberal provisions, and early movements, will, we understand, be made to enable its managers to commence operations.

To the Editor of the Gazette—

"Sir: The movements in the province respecting this railway have attracted general attention, and much anxiety having been manifested as to its eastern and western termination, by people in the province near its extremities, and by our friends in the United States, I take the liberty of making a few remarks relating to a question of so much real moment to the company, and to the interests existing at or near the probable terminations of the road.

"The charter fixes but two points to and through which the road must pass, namely, the towns of Hamilton and London, and this was done for the purpose of securing it as a great provincial enterprize, capable hereafter of extension down the province to Montreal. The eastern termination must be somewhere on the Niagara river, and the western termination must be at some point on the Detroit or St. Clair rivers, or on both, branching off at London. The precise points of these terminations will be decided on hereafter by the stockholders, all of whom, whether residents or non-residents of the province have a voice according to the amount of stock held by them. The proper course therefore for every interest, either in or out of the province, which may be particularly interested in the termini, is plainly to secure the majority of the stock, this will give such interest the power of controlling the termini of the road. The stockholders here will be satisfied with having the points of Hamilton and London, and are perfectly willing to leave the termini to the choice of the majority of the stockholders—indeed they cannot do otherwise.

"The capital stock is £1,500,000—$3,000,000—in shares of $50 each.

"The length of the line from Niagara or Queenston to Detroit, via Hamilton and London, is about 240 miles, and from Buffalo to the same place is about 255 miles, through the same towns.

"The length of the line from Niagara or Lewiston to Port Sarnia, through the same towns, is about 190 miles, and from Buffalo about 205 miles.

"The probable cost of the road has been variously estimated at from $12,000 to $20,000 per mile, according to the degree of permanency and solidity of construction.

"The route from Hamilton to Chatham,

145 miles, has been carefully surveyed and plans and estimates made by skillful engineers, and prove the country to be extremely favorable for a railroad.

"The government may resume the railroad in 30 years, by paying the company the amount of its cost, and 20 per cent. in addition, provided the company shall realize clear annual profits during that time of 12½ per cent. This amounts to a perpetual charter.

"The committee of management will shortly prepare and publish a mass of authentic data upon this interesting subject, to which I refer for more full information—and steps will be immediately taken to procure the remainder of the stock to be taken, in this province, the United States and England. Your obedient servant,

"A CANADIAN STOCKHOLDER.

"Hamilton, May 17, 1845."

We learn from the following paragraph from the Liverpool Mercury that another "big gun" is nearly completed in *England* for the *American* steam frigate Princeton! Should it, in *war*, prove as formidable to our enemies as did its predecessor, in time of peace, to our friends, we should not require more than *half a dozen such* guns, and such officers as its *father*, to rid us of a whole nation of enemies, especially if not a more powerful nation than Great Britain or *Mexico!*

Seriously, however, it appears to us that it is quite time for our government to arrest this system of favoriteism to *certain* officers, who have been fortunate in *some*, if not in all their speculations. What other officer in the navy or army, beside the commander of the *Princeton*, would have been thus indulged? and would *he* have been if he had only his pay as an officer to live on?

The "Princeton's" New Gun.—An immense cannon, intended for the American navy, is just being finished at the foundry of Messrs. Fawcett & Co., in this town. It is of malleable iron, of a superior quality, manufactured for the purpose at the Mersey iron works. The weight of metal previously to being bored was upwards of 11 tons, and the gun will be about 8 tons when finished. The length is 13 feet, and bore 12 inches; outside diameter of the widest part, 27½ in., the iron varying in thickness from 3½ in. at the mouth to 7¾ in. at the opposite extremity. The exterior is beautifully finished, bearing a polish similar to engine work, which has cost considerable time and labor. This pondrous piece of ordnance will, on its completion, be placed on board the American frigate Princeton, which is expected here shortly to receive it, and mounted on the same carriage which supported the huge cannon that burst some time back when several persons lost their lives. It is the largest ever made in this country, and will rank as one amongst many other efforts of mechanical skill and ingenuity in iron work which have emanated from Messrs. Fawcett and Co.'s establishment. Before its delivery, the gun will be tested by a double charge of gunpowder (54 lbs.) and two balls made for the purpose.

NORWICH AND WORCESTER RAILROAD.

The Worcester Spy makes the following explanation of a fact of some importance relating to this road:

"The Worcester and Norwich road pays a good income on the actual cost of its construction. The company undertook to build it when but a small portion of its stock was taken up by men able to hold it, and, in consequence thereof, were obliged to make great sacrifices to raise money, and finally disposed of a considerable portion of the stock at from fifty to sixty-five dollars per share.—The real par of the stock, that is to say, the average amount actually paid on the whole number of shares, instead of being one hundred dollars, is only sixty-seven. On that amount the road pays a good income, and shares now sell at $70 each, which is above the *actual*, though less than the *nominal* par value."

This would be found true, we doubt not, in numerous other instances, yet the work is deemed unprofitable until it pays full interest on its *par* value.

SUSPENSION AQUEDUCT.

We find the following paragraph in the Journal of Commerce, which announces the successful accomplishment of the new aqueduct for the canal over the Alleghany river, at Pittsburgh We have kept our eye on this work and looked to its completion with much interest; and now that the enterprising projector and contractor, Mr. John A. Roebling, whose name must be familiar to many of our readers, has successfully completed the work, we shall hold him to his promise to furnish us a full description of it for publication:—

"The water was let in the new wire suspension aqueduct between Pittsburgh and Alleghany, on Thursday evening, 22d inst., but was drawn off again the same evening in order to repair a small leak in the bank of the canal, near the Pittsburgh end of the aqueduct. Having been repaired, the water was again admitted on Friday evening, and the canal is now in order from Pittsburgh to the Portage railroad. Mr. Roebling, the contractor, has successfully achieved in this aqueduct a very difficult and important work."

ATLANTIC AND ST. LAWRENCE RAILROAD.

We learn from the Portland Advertiser that the books for subscription to the stock of this company will be opened on Monday, the 30th day of June next, at Augusta, Thompson, Bangor and Portland, in Maine, and also at Portsmouth, New Hampshire, Salem and Boston, Mass., and in the city of New York, and will remain open for ten days at each place.

The editor of the Advertiser says, very justly, that, "Montreal has entered grandly into the work. We are not so rich as they—our city is not half so large. But we must hold up our end! Sherbrooke, too, which is but a small place, has a large-hearted people, and has sent us word to be up and doing. We must pitch a tune here, for the whole line to Dixville Notch. They will keep up with us manfully, if we begin high enough. A well manifested confidence in Portland will produce an impression, which we need not expatiate upon, in reference to the subscriptions, which we have reason to look for, from capitalists in the money markets of this country and in Europe."

It is true that much, very much, depends upon Portland, and we doubt not her citizens will come up to the mark like real New Englanders.

CHENANGO CANAL.

We are encouraged a little in the hope that, as the resources of the country on its southern borders are more thoroughly developed, it may do something towards paying its expenses. The Binghampton Courier, of 15th inst., says, "The tolls collected at this port, last year, it will be recollected, exhibited a gratifying increase of business at this point of the Chenango canal—having more than doubled upon the preceding year. The collector informs us that the receipts of this year, so far, show a considerable increase over last year. As the resources of the country are developed, new sources of wealth and elements of trade are discovered and brought into profitable requisition. We have a strong soil fitted to a very diversified production, extensive forests abounding in valuable timber, and abundant water power; and these, the energy of our industrious inhabitants is rapidly making available to the supply of their wants and the production of wealth. A few days since a float containing thirty thousand cubic feet of timber, came some seventy miles down the Susquehanna, and was locked into the canal at this place, bound for Troy. This is a new experiment for this region, and is likely, it is said, to prove a profitable one. The tolls on this clearance alone were $600.',

THE BROAD GAUGE.

The London Railway Times has the following in relation to the wide track for railways, viz:

"It has been stated during the last few days, that in the event of the Gt. Western company proceeding with their line from Oxford to Rugby and Birmingham, it is the intention of the Grand Junction co. to carry on the broad gauge from Birmingham (in addition to the narrow) to Liverpool and Scotland! It is added, that surveys having been made of their line, the practicability of this scheme, at a moderate cost, has been ascertained. If effected, the journey between London and Edinburgh and Glasgow would be reduced to about 7 hours, and that to Liverpool to 3½ hours. The connection with Ireland would be also improved, as the Chester and Holyhead railway would possibly see it to be their interest to adopt the wide gauge."

DAVIES' IMPROVED RAILWAY BREAK.

There cannot be a question as to the necessity of some improvement in the "*break*" for railway carriages; and as the following description of a new plan which has been put upon some of the carriages of the London and Birmingham railway, is spoken of in a very favorable manner, we give it from the London Mining Journal, of 3d May, and ask attention to it from those who are engaged in the manufacture of cars, or in charge of railroads in this country.

"At the Society of Arts on Wednesday evening last, a paper was read descriptive of a new railway carriage break, the invention

of Mr. David Davies, and which we may safely state possesses advantages found in no other yet introduced, and which, at the same time, is free from all the serious objections hitherto urged against the old carriage breaks. Mr. Davies having explained the mechanism of his invention by a large diagram on the wall, Mr. Rotch, V.P., made some interesting and judicious remarks on the subject; to prepare his hearers for appreciating the advantages of this invention, he explained to them the action of the old break, viz: that of a wedge being driven down between the peripheries of the fore and hind wheels; the instant this action took place, a powerful strain was produced on the end of the axle, against which one side of the nave of the wheel was pressed, and the free side of the circumference still having an inclination to revolve, a twisting action was the result, which eventually produced a fracture of the axle. Another objection was the shaking and groaning noise to which the passengers in every break carriage were subject, causing considerable fear among the females, and inducing all parties who had been at all experienced in railway travelling to avoid the break carriage as they would a perfect nuisance. Mr. Davies' break removes all these objections; it consists of a series of eight levers, placed beneath the framework of the carriage, one end of each projecting to a level with the circumference of the wheels; these levers each turn on a fulcrum in the outer rail of the frame—thus making the short arm of the lever that which grips the wheel, and the long one projecting within the framework; these long arms are connected to two cross levers, which are acted upon by a diagonal bar, which, being put in motion by a winch handle on the roof acting on a screw, each of the four wheels are grasped at two opposite points, the same as if clasped by a pair of pincers, by which grip a far greater power is applied with the most perfect ease—while the pressure being equally distributed, there is no strain upon the axle, and the motion of the carriage is checked with the greatest possible rapidity. The whole arrangement of the levers is of the most simple description, and so smooth and perfect is the action, that a gentleman present, who had paid much attention to the working of this break, stated he had endeavored, under all circumstances, to detect any noise or grinding in its action, both in the carriage and on the roof, but that in all cases it worked perfectly smooth, and free from anything which could be of any possible annoyance; and further, that while descending inclines with the old break, the guard was compelled to keep up a firm pressure with his hands to retain the break in its place, while the action of the screw in the one described, was so perfect, that the moment the break was applied, the handle might be left without any fear of slipping, or the levers losing their hold. It appears there are six carriages on the London and Birmingham line to which these breaks are affixed, and which are found to be superior to all the others—one break carriage in a train being found as effective on the Euston incline as three on the old system. Mr. Rotch expressed some surprise that an invention of so much importance to the public safety and convenience, was not more warmly supported by the directors of railways generally, or that even on the London and Birmingham line, where it was found so efficient, they had not applied it to all their carriages;—much, however, as they had the welfare of the public at heart, they were compelled to consult their engineers, which circumstance too often prevented the introduction of useful inventions. He was, however, happy to say, since he had been in the room a letter had been handed to Mr. Davies, from an influential party connected with the London and Birmingham line, in which ample testimony was borne to the value of this break, and an opinion expressed that, by confining the cost to a moderate amount, they must make their way in all railway establishments."

THE IRON TRADE.

It is somewhat important for us here to keep well informed in relation to the iron trade in England; we therefore give the following remarks of the editor of the London Mining Journal in that paper of 3d May.

"The advance in the price of iron within the past few months, to which we have from time to time directed attention, and the general improvement in the iron trade, has been most encouraging—while, as might naturally be expected, would be the case under such circumstances, expectations have been raised and prices quoted or imagined, which any one possessing a knowledge of the trade itself, must have been well aware could never be maintained. We last week noticed the considerable rise which has taken place, while the result of the meetings held during the last and present week, noticed in an article appended to these remarks, is, in itself, convincing evidence that we were not wrong in saying the price of iron had reached its maximum—at least for the present. The demands of the colliers, and others employed, have, we admit, been met by the masters with a liberality correspondent with the advance in prices, and the profits which they derive; but there is a limit, and glad are we to find that the ironmasters have of their own accord, determined to prevent, so far as they can, those consequences which must result from a reaction. The demand for iron, more especially bar, and railway iron, for the next three years, can be pretty well ascertained or calculated upon, and that alone will not only keep the present works in active operation, but may justify a partial extension; but this is only for a time, and we caution those who would embark capital, from hastily rushing into undertakings which, however they may answer for the moment, yet, it must be remembered, require a large capital, not only invested for carrying on operations, but expended in the 'plant.'

"We feel satisfied that with prudence on the part of the ironmasters, the price of iron, if not supported at the present quotations will, at least obtain such a price, that while it not only pays a good per centage on the capital employed, will give to the collier and miner, as well as to all other operatives, fair wages—this is all that can be required or looked for, and with this, we feel assured, all will be content. The letters which appear in our columns give some valuable statistics and points for consideration—that a certain animus pervades the writers is only natural, but it is only fair to look on both sides of the question."

W. R. CASEY, CIVIL ENGINEER, NO. 23 Chambers street, New York, will make surveys, estimates of cost and reports for railways, canals, roads, docks, wharves, dams and bridges of every description, with plans and specifications. He will also act as agent for the sale or purchase of machinery, and of patent rights for improvements relating to public works.

TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside. THOMAS & EDMUND GEORGE,
ja45 N. E. cor. 12th and Market sts., Philad., Pa.

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston.

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York, will be punctually attended to.

HENRY BURDEN, *Agent.*

Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufcturing so as to keep pace with the daily increasing demand. ja45

NEW JERSEY RAILROAD AND TRANSPORTATION COMPANY.

Length of Road, 33 96-100 miles. Capital, $2,000,000.

JOHN S. DARCY, Esq., President. ROBERT SCHUYLER, Esq., Vice President.

J. P. JACKSON, Esq., Secretary. J. WORTHINGTON, Esq., Treasurer.

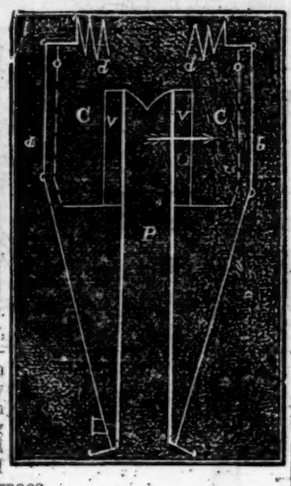
Leave New York, foot of Courtland street.	DAILY. A. M.	DAILY. P. M.	SUNDAY. A. M.	SUNDAY. P. M.
For Newark	9, 11, 12	2, 3, 4 3-4, 6, 7 1-2	9	4 3-4
" Elizabethtown	9, 11	2, 3, 4 3-4, 6		
" Rahway	9, 11	3, 4 3-4, 6		
" New Brunswick	9	3, 4 3-4		
Leave New Brunswick	6, 7 1-2, 11 1-2	8 3-4	11 1-2	8 1-2
Rahway	6 3-4, 7, 8 1-4, 12	4 3-4, 9 1-4		
Elizabethtown	7, 7 1-2, 8 1-2, 10 1-2, 12	3 1-2, 5		
Newark	7 1-2, 8 1-4, 9, 11	1 1-2, 4, 5 1-2, 7, 9 3-4	11 3-4	9 3-4
For New York.				

9 A. M. and 3 P. M. to meet the Morris and Essex trains, and 9 A. M. and 4 3-4 P. M. to meet the Somerville train, and for Philadelphia.

TABLE OF DISTANCES AND FARES.

	New York. Miles.	New York. Cents.	Newark. Miles.	Newark. Cents.	Elizabethtown. Miles.	Elizabethtown. Cents.	Rahway. Miles.	Rahway. Cents.	N. Brunswick Miles.	N. Brunswick Cents.
New York			9 1-4	25	14 1-2	31 1-4	19 3-4	31 1-4	31 1-2	50
Newark	9 1-4	25			5 1-2	12 1-2	10 1-2	25	22 1-2	50
Elizabethtown	14 1-2	31 1-4	5 1-2	12 1-2			5	12 1-2	16 3-4	50
Rahway	19 3-4	31 1-4	10 1-2	25	5	12 1-2			11 3-4	37 1-2
New Brunswick	31 1-2	50	22 1-2	50	16 3-4	50	11 3-4	37 1-2		

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.



TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

E. A. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, or to Messrs. Baldwin & Whitney, of this city, will be promptly executed. FRENCH & BAIRD.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms. *Philadelphia, Pa., April 6, 1844.*

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

SAMUEL NOTT, CIVIL ENGINEER, SURveyor and General Agent, Bangor, Me. Railroads, Common Roads, Canal, Factory and Mill Sites Towns, Farms, Wild Land, etc., surveyed. Plans and Estimates for Buildings, Bridges, etc., prepared, and all appertaining business executed.

— REFERENCES. —

Boston, { Col. James F. Baldwin, Civil Engineer. Col. J. M. Fessenden, " "

Wm. Parker, Esq., Engineer and Superintendent Boston and Worcester railroad. ja45

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent*,

j5a3 Albany Iron and Nail Works, Troy, N. Y.

FOR SALE, AT A SACRIFICE—A LOCOmotive Engine, 4 wheels and Tender. Cylinders 10 in. dia., Stroke 16 in., Cylinders inside of smoke box. Weight of engine, with wood and water, about 9 tons. This engine and tender are new, and of the best materials and workmanship. If required, would be altered to a 6 wheeled engine.

Also, 1 20-horse High Pressure Steam Engine.
2 8-horse " " "
1 Upright Hydraulic Press.

All of which will be sold low, on application to

T. W. & R. C. SMITH.
Founders and Machinists,
May 12tf Alexandria, D. C.

RAILROAD IRON AND FIXTURES. THE Subscribers are ready to execute orders for the above, or to contract therefor, at a fixed price, delivered in the United States.

DAVIS, BROOKS & CO.,
ja45 21 Broad st., N. York.

MACHENE WORKS OF ROGERS, KETCHum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
a15 Paterson, N. J., or 60 Wall street, N. York.

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

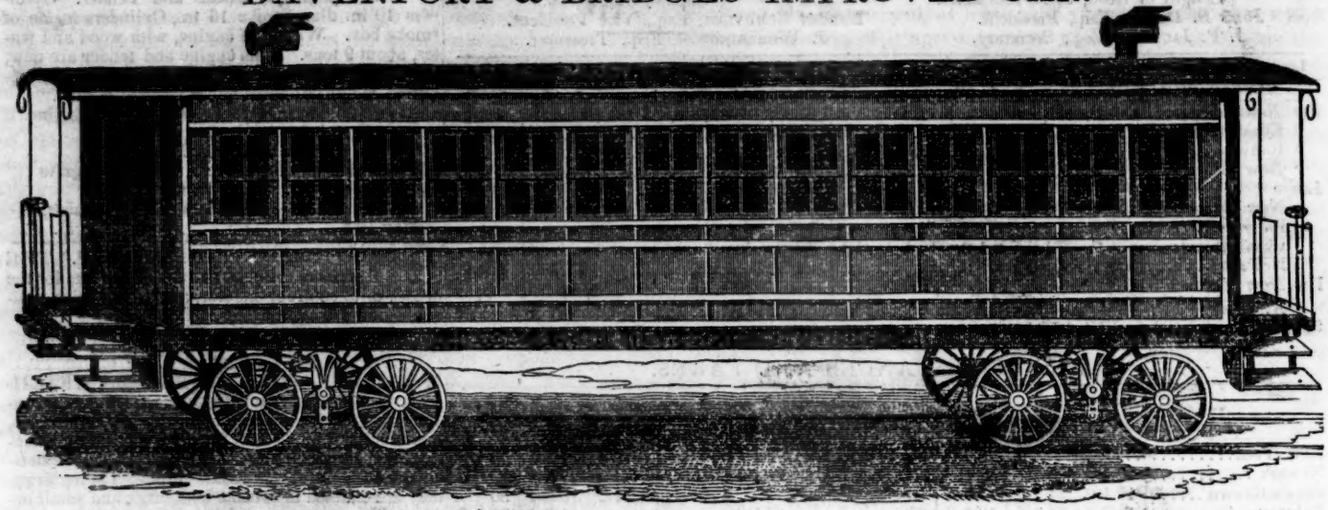
Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee. G. A. NICOLLS,
ja45 *Reading, Pa.*

GEORGE VAIL & CO., SPEEDWELL IRON Works, Morristown, Morris Co., N. J.—Manufacturers of Railroad Machinery; Wrought Iron Tires, made from the best iron, either hammered or rolled, from 1¾ in. to 2¼ in thick.—bored and turned outside if required. Railroad Companies wishing to order, will please give the exact inside diameter, or circumference, to which they wish the Tires made, and they may rely upon being served according to order, and also punctually, as a large quantity of the straight bar is kept constantly on hand.—Crank Axles, made from the best refined iron; Straight Axles, for Outside Connection Engines; Wro't. Iron Engine and Truck Frames; Railroad Jack Screws; Railroad Pumping and Sawing Machines, to be driven by the Locomotive; Stationary Steam Engines; Wro't. Iron work for Steamboats, and Shafting of any size; Grist Mill, Saw Mill and Paper Mill Machinery; Mill Gearing and Mill Wright work of all kinds; Steam Saw Mills of simple and economical construction, and very effective Iron and Brass Castings of all descriptions.

ja451y

DAVENPORT & BRIDGES' IMPROVED CAR.



DAVENPORT & BRIDGES CONTINUE TO MANUFACTURE TO ORDER, AT THEIR WORKS, IN CAMBRIDGEPORT, MASS. Passenger and Freight Cars of every description, and of the most improved pattern. They also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices. All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—coaches pass every fifteen minutes.

DAVENPORT & BRIDGES' IMPROVED PATENT IRON TRUCK.

Fig. 1.

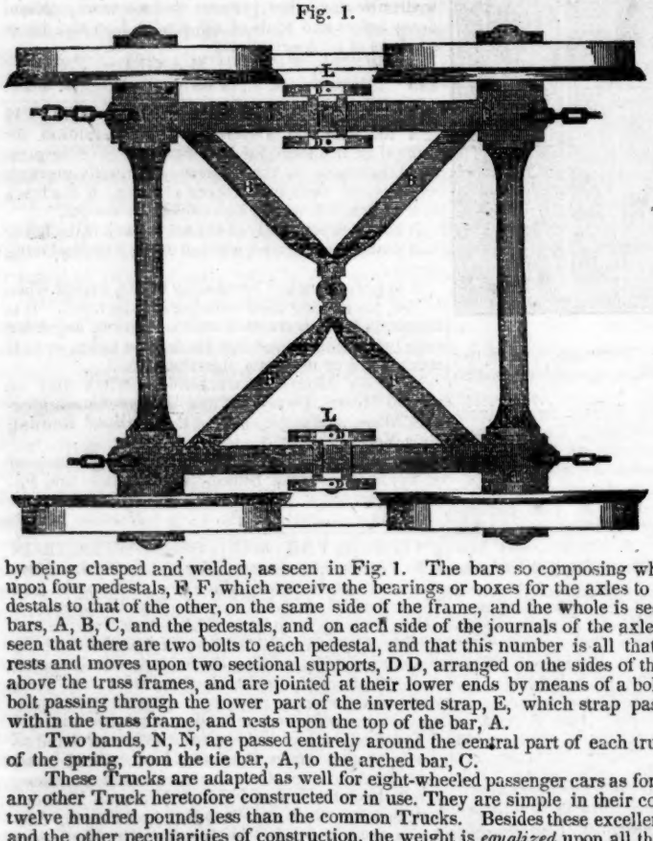
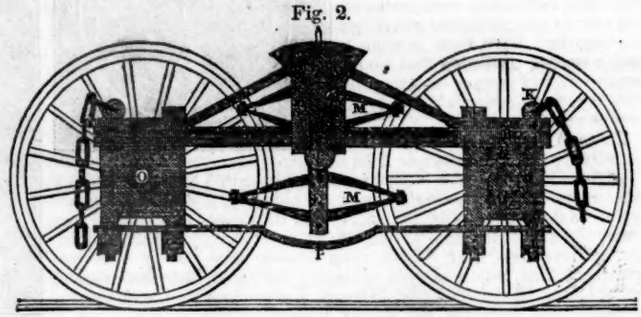


Fig. 2.



DAVENPORT & BRIDGES' IMPROVED PATENT IRON TRUCK FOR RAILROAD CARS, is presented above, and the attention of Railroad Companies is respectfully invited to the following description of their justly-celebrated invention:

Fig. 1 of the drawing above represents a top view or plan of our Improved Railroad Truck. Fig. 2 is a central, longitudinal, and vertical section. C, Fig. 1 and 2, represents the arched bars of the side trusses: they consist of two long bars of plate iron (about three inches wide by seven-eighths of an inch thick,) bent into the shape as seen in drawing 2. Each of them is placed directly over a flat and straight tie bar, A, which extends from one end to the other, as seen in Fig. 2. These parts, so arranged, receive between their ends the ends of diagonal cross bars or braces, B, which are united at their centres by being clasped and welded, as seen in Fig. 1. The bars so composing what may be considered as side trusses and diagonal cross braces, rest at their ends upon four pedestals, F, F, which receive the bearings or boxes for the axles to run on. Another flat tie bar, P, extends from the under side of one of the pedestals to that of the other, on the same side of the frame, and the whole is secured together by eight bolts, J, J, passing down through the ends of the several bars, A, B, C, and the pedestals, and on each side of the journals of the axles, O, O, in the positions represented in the drawings. From the above it will be seen that there are two bolts to each pedestal, and that this number is all that is requisite for the full security of the bars and pedestals together. The body rests and moves upon two sectional supports, D D, arranged on the sides of the truss frames, as seen in Fig. 2; they extend somewhat, or a sufficient distance above the truss frames, and are jointed at their lower ends by means of a bolt, L, which rests upon the top of the lower spring, M, which spring rests upon a bolt passing through the lower part of the inverted strap, E, which strap passes over and rests upon the top part of the upper spring, M, which is placed within the truss frame, and rests upon the top of the bar, A.

Two bands, N, N, are passed entirely around the central part of each truss frame, the object of the same being to transfer the strain, or a portion thereof, of the spring, from the tie bar, A, to the arched bar, C.

These Trucks are adapted as well for eight-wheeled passenger cars as for baggage and freight cars, giving to each a more agreeable and easy motion than any other Truck heretofore constructed or in use. They are simple in their construction, combining strength and great durability, although weighing at least twelve hundred pounds less than the common Trucks. Besides these excellences, by reason of the elasticity of the braces, B, B, B, B, as seen in the drawing, and the other peculiarities of construction, the weight is *equalized* upon all the wheels, and yet any one may be raised so as to pass any inequality on the rails without lifting either of the other wheels from the track, thus rendering it almost impossible to run a car off. Being bound, and having as it were but four joinings, they are protected from injury by lateral strains, and in case of damage are easily repaired.

These excellences have been fully tested by use, for a long time, on the Eastern, the Fitchburg and Long Island railroads; and for proof of the above stated superiority of these Trucks over all others, we refer to the experience of those who have used and run them.

CAMBRIDGEPORT, April 1, 1845.

DAVENPORT & BRIDGES.